VOL. 119 October, 1956 NO. 4

MILITARY MEDICINE

(*Formerly* THE MILITARY SURGEON)

Official Publication · Association Military Surgeons of the United States

President:
REAR ADM. W. DANA
(MC), U. S. Navy

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Published monthly and constituting two volumes annually.
Volumes commence with the January and July numbers.

Contents

• Entered as second class matter at the post office at Washington, D.C., with additional entry at Menasha, Wisconsin. • Acceptance for mailing at special rate of postage provided for in paragraph 4, section 538 P. L. & R., authorized April 14, 1926. • Publication office: 450 Ahnaip Street, Menasha, Wisconsin. • Editorial and Executive Office: Suite 718, New Medical Building, 1726 Eye St. N.W., Washington, D. C. • Advertising Representative: 280 Madison Ave., New York 16, N.Y. • Subscription $7.50 a year for the United States. Elsewhere throughout the world, $8.50. Current copy, 75 cents. Subscriptions payable in advance. Membership dues (including subscription to MILITARY MEDICINE) $6.00. Checks should be made payable to The Association of Military Surgeons, U.S., and not to any officer personally. • *The addresses of members and subscribers are not changed except upon request.* In every case the old as well as the new address should be given. Requests for change of address must reach the Secretary before the fifteenth of the month to be effective for the following issue. • Requests for reprints should be made at the time of forwarding article. Authors alone are responsible for the opinions expressed in their contributions. Printed in U.S.A.

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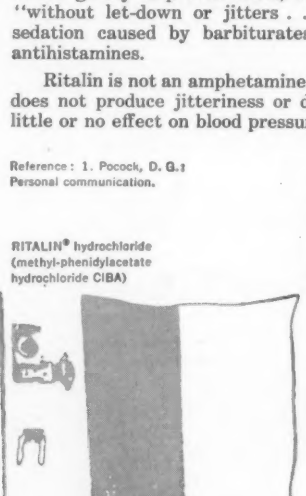

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VOL. 119 October, 1956 NO. 4

MILITARY MEDICINE

ORIGINAL ARTICLES

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Use of Promazine* in the Management of Medical Emergencies

By

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IN PREVIOUS publications[1,2] we described our experiences in the use of promazine for the management of acutely disturbed psychiatric patients. The effectiveness of this drug in controlling many overt manifestations associated with various alcohol and drug-induced withdrawal syndromes and in certain acute agitated psychotic states suggested its usefulness in the management of some of the symptoms accompanying medical emergencies. More specifically, certain pharmacological characteristics of the drug (i.e., antiemetic effects, barbiturate- and analgesic-potentiating activity, and tranquilizing action) could be expected to be of value in the management of patients in whom nausea, vomiting, anxiety, pain and even psychosis may interfere with diagnostic and therapeutic regimens.

This report describes the clinical effectiveness of promazine in the management of 47 patients with distressing symptoms which required immediate therapy. Case histories demonstrating some of the more dramatic responses to promazine are included. In addition, several cases are presented in which undesirable side-effects accompanied the use of this drug.

RESULTS

Table I presents 47 cases to whom promazine was administered for the control of nausea and vomiting, pain, anxiety, hiccoughs, apprehension, etc., associated with various disease states. The dose of promazine varied from 25 mg. to 200 mg., given intravenously, intramuscularly, or orally, for periods of 2 to 30 days. In the majority of cases, an immediate good-to-excellent response was observed. In one case of systemic lupus erythematosis, nausea was not relieved by 50 mg. doses, and in one case of rheumatoid arthritis even 100 mg. of the drug had at best an equivocal effect in relieving pain. The effectiveness of promazine is illustrated by the following abbreviated case histories.

Case 1. Uncooperative Patient: A 56-year-old known alcoholic was admitted to the Medical Service because of fever of unknown etiology. Physical examination and diagnostic studies could not be satisfactorily performed because of marked agitation and confusion. Promazine (100 mg.) was admin-

This investigation was supported in part by a research grant (PHS B-178) from the National Institute of Neurological Diseases and Blindness of the National Institutes of Health, Public Health Service, and in part by a research grant from the Donner Foundation.

* The promazine used in this study was supplied as Sparine by Wyeth Laboratories, Philadelphia.

TABLE I. PROMAZINE IN THE MANAGEMENT OF MEDICAL DISTURBANCES

Case No.	Age	Diagnosis	Therapeutic Indication	Dose and Route	Duration of Therapy in Days	Response
1	56	Tetanus	Control convulsions and for Relaxation	100 mg., q4h., I.V.	2	Good muscle relaxation Opisthotonus—no convulsions
2	36	Duodenal ulcer, D.T.'s	Control D.T.'s and nausea	50 mg., q6h, p.o.	6	No trouble with nausea
3	60	Peptic ulcer and hiatal hernia	For sedation	50 mg., q6h, p.o.	13	Good response—no pains
4	45	Pancreatitis, Gastritis	Hyperactivity	50 mg., q6h, p.o.	7	Good response—pain diminished
5	42	Cirrhosis and D.T.'s	Hyperactivity	50 mg., q4h., I.M.	7	Good sedation
6	38	Ca. lung	Pain control	50 mg., q6h, p.o.	34	Good control
7	40	Intracranial hemorrhage and M.S.	Pain in muscles	50 mg., q.i.d., p.o.	35	Good control of muscle pain
8	30	Ulcerative colitis	Pain from muscle and vomiting	100 mg., q6h, I.M.	36	Fair response
9	38	Sickle cell crisis, Narcotic addict	Control pain	100 mg., q4h, p.o.	3	Good response
10	48	Rt. lower lobe pneumonia, Chronic alcoholic	Control activity	100 mg., q6h, p.o.	12	Good response
11	44	Pneumonia	Vomiting & D.T.'s	50 mg. q6h, I.M.	6	Good response, immediate
12	60	Ca. pancreas	Abdominal pain	25 mg., t.i.d., I.M.	10	Good pain control
13	48	G.I. bleeder with anorexia and fever	For vomiting	50 mg., q6h, I.M. 50 mg., q6h, p.o.	4 7	Vomiting controlled
14	41	Asthma	Anxious, Wheezing, coughing	100 mg., q6h, p.o.	12	Immediate relief
15	53	Pulmonary edema and Myocardial infarction	Hiccoughs	50 mg., q6h, p.o.	13	Immediate relief
16	46	Lupus erythematosis	Nausea and vomiting	50 mg., b.i.d., p.o. 50 mg. q6h., I.M.	4 3	Poor control of vomiting
17	89	Carcinosis	Vomiting	50 mg., q8h, p.o.	13	Immediate control
18	43	HCVD, Pulmonary edema	Sedative	50 mg., t.i.d., p.o.	3	Good
19	43	Hiccoughs	Relief	100 mg., q4h, p.o.	8	Hiccoughs ceased

TABLE I—(*continued*)

19	43	Hiccoughs	Relief	100 mg., q4h, p.o.	8	Hiccoughs ceased

TABLE I—(*continued*)

Case No.	Age	Diagnosis	Therapeutic Indication	Dose and Route	Duration of Therapy In Days	Response
20	42	Pneumonia	Restlessness and apprehension	100 mg., q4h., p.o.	7	Well controlled
21	24	Pneumonia, FUO—D.T.'s	Restlessness and apprehension	70 mg., q4h, I.M.	3	Well controlled
22	13	Uremia	Vomiting	25 mg., q6h	4	Vomiting controlled
23	57	Alcoholic (post)	D.T.'s and Pain in chest	50 mg., q.i.d., I.M.	25	Controlled D.T.'s, pain relieved
24	42	Alcoholic (post)	Confused and disoriented	50 mg., q6h, p.o.	27	Fair control
25	71	HCVD—cerebral arteriosclerosis	Behavior problem	50 mg., t.i.d., p.o.	9	Good
26	47	Rheumatoid arthritis, Acute excitation	Pain	50 mg., q6h, p.o. 50 mg., q6h, p.o.	3 5	Fair response
27	16	Stricture of esophagus, Pregnancy—hypertension	Vomiting	50 mg., q6h, I.M. 25 mg., q6h, I.M.	2 3	Controlled vomiting
28	31	Chronic glomerulonephritis	Control nausea and Vomiting	50 mg., q.i.d., p.o.	9	Good
29	53	Ca. Prostate	Pain control	50 mg., q6h, p.o.	6	Good
30	51	Ca. Breast	Pain control	100 mg., q6h, p.o.	15	Good
31	49	Ca. Lungs	Pain control	150 mg., q6h, p.o.	8	Good
32	33	Acute pancreatitis, Hyperthermia, D.T.'s	Control activity	75 mg., q6h, I.M.	8	Good
33	44	Kimmel-Steele-Wilson	Control nausea and Vomiting	25 mg., t.i.d., I.M.	10	Good
34	30	Ca. Lungs	Pain control	50 mg., q6h, p.o.	11	Good
35	36	Mental obs.	Control anxiety	75 mg., q4h, p.o.	30	Good
36	24	Drug Addict	Pain control	100 mg., q4h, p.o.	2	Good
37	19	Mental obs.	Control anxiety	200 mg., q4h, I.M.	6	Good
38	21	Mental obs.	Control anxiety	150 mg., q4h, I.M.	8	Good
39	58	Mental obs.	Control anxiety	200 mg., q4h, p.o.	15	Good

TABLE 1. (*Continued*)

Case No.	Age	Diagnosis	Therapeutic Indication	Dose and Route	Duration of Therapy In Days	Response
40	35	D.T.'s with Hyperemisis	Control nausea and Vomiting	100 mg., q6h, p.o.	2	Good
41	23	Mental obs.	Control anxiety	200 mg., q4h, p.o.	5	Fair
42	43	Ca. Cervix Uremia	Control pain, nausea and Vomiting	100 mg., q6h, I.M.	8	Good
43	50	Alcoholic with head trauma	Agitated, uncooperative	50 mg., p.o.	single dose	Sleeping, easily examined
44	40	Alcoholic, questionable subdural hemotoma	Uncooperative	100 mg., p.o.	single dose	Sleeping, easily examined
45	46	Subarachnoid hemorrhage	Restless, Uncooperative	50 mg., q6h, p.o.	3	Good, quieted
46	12	Head injury	Agitation, Crying	25 mg., q4h, I.M.	10	Good, quieted
47	47	Fractured mandible, Subarachnoid hemorrhage	Uncooperative, Restrain	50 mg., q4h, I.M.	36 hours	Good, quieted

istered intraveneously, and within 15 minutes the patient was asleep. Examination then disclosed a blood pressure of 160/110 mm. Hg, pulse rate of 130 per minute, temperature of 103°F., and possible atelectasis of the right lower lobe. In view of recurrent agitation it was necessary to continue to administer promazine in doses of 100 mg. intramuscularly every 4 hours. The necessary diagnostic studies (chest films, bronchoscopy, blood and sputum cultures, etc.) could then be performed without difficulty in this previously unmanageable patient.

Case 2. Vomiting with Electrolyte Disturbance: A 38-year-old man was admitted with intractable hiccoughs and associated nausea and vomiting of two weeks' duration. Physical examination on admission revealed a markedly apprehensive, dehydrated young male having intermittent bouts of hiccoughs and vomiting. Electrolyte studies showed severe hypochloremic alkalosis. Replacement therapy relieved the dehydration and electrolyte imbalance but hiccoughs, nausea, and occasional vomiting persisted. Within one hour after the intramuscular administration of 100 mg. of promazine, the signs and symptoms of his disturbance disappeared. He was thereafter satisfactorily managed on a regimen of 50 mg. of oral promazine administered four times daily while further diagnostic studies were performed.

Case 3. Psychogenic Component in Asthma: A 37-year-old woman, asthmatic since age 14, was admitted for the fourth time in a five-month period for intractable asthma. This exacerbation had occurred in spite of a medical regime which included bronchodilators, antibiotics, and intermittent courses of steroid therapy. Physical examination revealed a markedly apprehensive, cyanotic patient with findings of obvious emphysema and bronchospasm. It was clinically apparent that there was a psychogenic component to her disturbance. Promazine, 100 mg., administered intravenously, resulted in marked relief of symptoms and physical signs. In one hour she fell into a state of peaceful sleep from which she could be easily aroused to take oral fluids and food.

Case 4. Severe Chronic Pain: A 59-year-old man was admitted to the Medical Service because of intractable pain in the left shoulder and neck. Physical examination and x-ray findings were consistent with the diagnosis of bronchogenic carcinoma with metastases to the left shoulder. The patient was started on chlorpromazine, 150 mg. every 6 hours orally, and small doses (¼ grain) of codeine for 28 days with good control of pain. Promazine was then substituted for chlorpromazine in similar dosage over a 9-day period with equally satisfactory relief of symptoms.

Case 5. Esophageal Stricture: An 18-year-old pregnant colored female was admitted with a chief complaint of nausea and retching of 3 weeks' duration. There was a past history of an esophageal stricture secondary to esophagitis during a previous pregnancy two years prior to the present admission. Esophagoscopy and barium swallow demonstrated edema and stricture of the lower esophagus; it was impossible to pass a sound or string beyond the lesion. Amytal, atropine and amphetamine, singly or combined, were ineffective in control of retching. Promazine, 25 mg. every 4 hours intramuscularly, completely controlled the nausea and retching and made feasible supportive care leading eventually to surgical treatment.

Case 6. Tetanus: A 32-year-old colored female was admitted one week after an induced abortion with the chief complaint of trismus and lumbar pain. The diagnosis of tetanus was made, and the disease course progressed to the state of moderate opisthotonus, severe masseter spasm, risor sardonicus, and rectus spasm. Initial treatment with high doses of barbiturates was fairly effective but rendered the patient completely stuporous. Promazine in doses of 100 mg. every four hours intravenously produced marked muscle relaxation and reduced the need for barbiturate to 25 percent of the original daily dose.

Case 7. Hiccoughs with Myocardial Infarction: A 53-year-old male was admitted because of severe dyspnea with chest pain, midepigastric distress and nausea. There had been a myocardial infarction two years previously. Clinical impression of recurrent myocardial infarction was substantiated by electrocardiograms and transaminase determinations. Although the acute pulmonary edema responded well to the usual therapeutic regime, 18 hours following admission the patient developed persistent hiccoughs and despite heavy sedation experienced recurrence of chest discomfort. Promazine was administered intramuscularly in a dose of 25 mg. with complete remission of hiccoughs 30 minutes thereafter.

Case 8. Head Injury: A 47-year-old man was admitted to the Dental Service following an automobile accident in which he sustained a compound comminuted fracture of the mandible. Neurological examination on admission disclosed no evident abnormalities. On the following day, because of restlessness and clouding of the sensorium, he was again seen by the neurological consultant. Nuchal rigidity was now apparent, and a lumbar puncture revealed grossly bloody spinal fluid. The diagnosis of traumatic subarachnoid hemorrhage was made. Later that day partial respiratory obstruction developed. The patient became considerably more restless, apprehensive and agitated, requiring restraints. Tracheotomy was considered advisable. Promazine, 50 mgs. intramuscularly, was administered 45 minutes prior to the procedure, and the patient was thereafter satisfactorily quieted. The tracheotomy was then performed without difficulty under local anesthesia. Subsequently restlessness was satisfactorily controlled by repeated doses of promazine. Spontaneous improvement occurred within 36 hours after the tracheotomy.

Discussion

The results of the present study indicate that promazine may be employed to advantage to aid in both diagnostic and therapeutic medical regimens. Such non-specific symptoms as anxiety, pain, vomiting, and hiccoughs frequently make more difficult the specific and symptomatic therapy of organic disease. The opiates and barbiturates, al-

though often reasonably satisfactory in controlling such manifestations, in many instances are ineffective, cannot be used in large doses over prolonged periods, may mask diagnosis, or even in some cases aggravate the symptoms of the disease process. Promazine, in addition to reducing anxiety and psychomotor activity by virtue of its subcortical sites of action, possesses other properties which render it extremely useful. It apparently inhibits primitive reflex patterns originating in the reticular formation. Experimentally it has been demonstrated that promazine is effective in controlling copper sulfate-induced emesis. It should not be surprising, therefore, that it has proven to be clinically effective in controlling nausea and vomiting. The increase of the pain threshold following administration of promazine can probably be related to its blocking effect on subcortical pathways. In addition, the emotional detachment resulting from its administration may render the patient relatively indifferent to his discomfort. In the present study in a number of subjects it was possible, with the use of promazine, to decrease significantly the amount of analgesic required. Control of nausea and vomiting, as well as the increase in pain threshold and mental detachment resulting from the use of promazine makes this drug particularly valuable in the management of patients with terminal carcinoma. It has been widely recognized that the relief of anxiety may often play a major role in the management of organic disease states. This is particularly striking in patients with bronchial asthma, in whom respiratory difficulty not only may be aggravated by, but also may cause additional anxiety, thus intensifying and perpetuating the underlying disturbance. Relief of this anxiety simplifies the management of such patients. Promazine, aside from its tranquilizing properties, has been found in animals to have a specific bronchodilating action.[3]

For some time it has been routine in our hospital to utilize promazine in most cases of acute anxiety and in organic psychoses. Promazine facilitates performance of diagnostic procedures and often makes it possible to obtain a more coherent history. Patients, rendered quiescent by use of the drug, more readily cooperate in the performance of emergency procedures such as lumbar puncture, x-ray, bronchoscopy, emergency G.I. series, and sigmoidoscopy. Since deep sedation or depression of the respiratory centers is not produced by this drug, we have utilized it to great advantage in the management of patients with head injury. This property of inducing a state resembling natural sleep permits constant evaluation of the patient's neurological status, and does not obscure the manifestations of an expanding intracranial lesion.

In our total experience (approximately 2,500 cases) untoward side effects following the use of promazine have not been observed with any significant frequency, nevertheless some general comments seem indicated at this time. Acute vascular collapse (shock) directly attributed to promazine alone, has not been observed. In two cases, however, one with active gastrointestinal bleeding and the other with massive pulmonary embolism, secondary shock occurred after the administration of promazine. It would appear inadvisable to administer the drug to patients with impending vascular collapse. Orthostatic hypotension has been observed, but in most such instances the moderate reduction of pressure was associated with an increase of heart rate. In one patient a transient reduction of pressure of considerable magnitude occurred following the intramuscular use of promazine. The subject was in the sitting position when shock levels of blood pressure were recorded; upon assumption of the Trendelenburg position blood pressure rapidly returned to the normal level.

Hyperpyrexia possibly attributable to the administration of promazine occurred in one patient of this series. Extensive diagnostic studies failed to disclose a specific etiology, and fever subsided following withdrawl of the drug.

It has been observed that chlorpromazine may reduce the excitability threshold of the

central nervous system and that convulsions may occur in patients with a predisposition to seizures.[4] Patients with brain damage or with abnormal electroencephalograms appear to be particularly susceptible to convulsions after chlorpromazine administration. In one patient, not included in the present study, the intravenous administration of 750 mg. of promazine was followed within 3 to 4 minutes by a typical grand mal seizure. The patient, a chronic alcoholic, had been admitted because of acute post-alcoholic psychosis (delirium tremens). It is generally recognized that this type of patient frequently develops seizures or "rum fits." It is probable that in this instance promazine precipitated a seizure in a patient who was predisposed to such an attack. It should be emphasized that the amount of drug administered was well above the usual therapeutic dose. Although this is the only case in our experience where a seizure has occurred during promazine therapy, it may be advisable to observe some caution in administering the drug to patients with a past history of seizures or to patients known to have had organic brain damage, who theoretically may have some predisposition to seizures. Certainly in such cases anticonvulsant medication after having been administered should not be withdrawn. Where a predisposition to seizures is considered to be present but has not previously required anticonvulsant medication, it might even be advisable to institute such therapy prophylactically if relatively large amounts of the phenothiazine derivatives appear to be indicated. If barbiturates or similar hypnotics are used for their anticonvulsant properties, the potentiation of their depressant effects by the phenothiazines should be kept in mind.

The two phenothiazine compounds, promazine and chlorpromazine, are quite similar in their therapeutic effects. There is also a close chemical structural relationship. However, promazine is actually an isomer of promethazine (Phenergan®) and therefore more closely related chemically to the latter compound. This close structural relationship to Phenergan, an agent that has proved to be exceedingly safe even when given in large doses, may perhaps explain in part the decreased frequency of side reactions seen with promazine as compared to chlorpromazine.

Summary and Conclusions

Forty-seven patients exhibiting various medical and psychiatric disturbances were given promazine in order to assist in their management. In all but two cases, the doses used (25 mg. to 200 mg.) permitted satisfactory control of such diverse problems as agitation, anxiety, nausea, vomiting, pain, and hiccoughs. Side effects following the use of this drug in a larger series of patients (mostly psychiatric problems) are discussed.

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An Informed Profession Is Vital to the Nation's Health*

By

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AMONG all members of the health professions, the veterinarian might be considered most unique. He must be equipped to minister to the ills of animals, regardless of species, size, or degree of domesticity. He is expected to have a complete familiarity with the anatomy and physiology of mammalian life, in addition to exhaustive knowledge of the variety of diseases with which each species may be affected. He must understand completely some of the complex aspects of animal production and economics so that he can provide sound counsel to animal owners in rural and urban environments.

On the other hand, the veterinarian must be prepared to maintain and strengthen the bridge that exists between animal health and human welfare. Today, we realize more than ever before that man's relationship to his winged and four-footed friends is closer than we ever thought it could be. It is close from the standpoint of changing patterns of diseases themselves. This was dramatically demonstrated in Scotland when the virus of the louping-ill type transferred itself from sheep to humans. The louping disorder which had heretofore caused sheep to loup (or leap) affected Scotsmen in the form of double vision, headaches and fever. Man's health is intimately associated with field observations and formal veterinary research. The former brings sharply into focus the observation made some years ago that animals fed on spoiled sweet clover frequently succumbed to fatal hemorrhage. This resulted in the discovery of dicoumerol, an anti-clotting compound widely used in human medicine in the treatment of diseases of the heart and circulatory system.

THE NATION'S HEALTH

Healthy citizens are the nation's most basic resource. Prosperity and the national security depend heavily on maintaining health at the highest possible level. Regardless of the direction in which our professional skills are now being used, it behooves us to know some of the basic facts related to the health needs of our country.

There are today vast areas of our nation whose populations are not receiving the benefits of full time public health services. This means that some of us still suffer severe losses through illness, disability, and death, much of which is unnecessary. Millions of man-years are lost each year through impaired health. Statistical longevity tables indicate that the span of man's life has increased greatly. This has stimulated our growing concern with health problems of an aging population and attendant problems of chronic diseases. A rapidly expanding population also brings to light the never-ending need for increased food supplies. Mental health, as is being recognized throughout the country, is one of our major concerns.

TEAMWORK FOR HEALTH

The medical sciences, of which veterinary medicine is an integral part, have a direct responsibility in teamwork for health. One could hardly expect understanding and action from the lay citizenry if the health professions, collectively or individually, failed to take the necessary leadership for meeting health needs realistically. In some cases this will require better utilization of existing resources; in others the development of new resources; but in every case the blending of skills for achieving a common goal. Veterinary medicine has made some noteworthy contributions to the health of mankind in fields of experimental medicine and surgery, communicable disease control, management of bone injuries, atomic medicine, food hy-

* Presented at the 62nd Annual Convention, Association of Military Surgeons of the United States, Washington, D.C., November 9, 1955.

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giene, and nutrition. Its potential in these fields is greater than ever before.

A well informed veterinarian, practitioner or public servant, civilian or military, must be alert to his responsibilities and prepared to deal with them effectively whenever called upon to do so. As professional people, good citizens, and members of the "medical team," veterinarians should have a major concern with, and intimate knowledge of, problems related to the nation's health and methods for their amelioration. Such concern should be manifested through active leadership in community affairs, a responsibility sometimes neglected by career military medical personnel. With national preparedness a major goal for some years to come, it is likely that most newly graduated veterinarians will serve for varying periods in the uniformed forces. It is during this time that these men will form lifelong habits related to their profession. Under revamped retirement plans for the uniformed services, even career personnel will find positions of responsibility awaiting them in nationwide activities related to public health. Some in this category are already at work. Their ultimate effectiveness on the job will depend upon how well informed they are—how well equipped to assume intelligent leadership in the light of rapid technological advancement and social development.

Education—An Uninterrupted Process

For each of us, education is an uninterrupted process beginning in childhood and continuing throughout life. Some of us think of education in terms of formal schooling to which we are exposed in our preparation for life's work. In consideration of even the minimum requirements leading to the degree in veterinary medicine, today's graduate veterinarian is at least 24 years old. The growing number of applicants to colleges of veterinary medicine who hold the Bachelor's degree (in lieu of the mandatory two year pre-veterinary requirement) are at least 26 years of age before they are ready to embark on their careers.

Today veterinary educators are carefully studying the educational span involved in the study of veterinary medicine. There appears to be general satisfaction that the total curriculum is long enough, although most agree that expanding horizons of medical science are adding to the fund of knowledge with which the well educated veterinarian must be thoroughly familiar. Despite a firmly rooted reluctance to add years to the total time now required for completion of the professional course, some believe this to be inevitable. This, of course, is counterbalanced by the student himself, who after considering personal, social and economic hardships involved, is forced to cut his pre-professional study to the bare minimum required for admission to veterinary school.

In addition to preparing the student for the professional curriculum in veterinary medicine, pre-professional study has a number of other goals. Among them are the capacity for growth, the development of emotional stability and a sense of social responsibility, as well as an insight into human relationships. In aggregate, these are the things that make for good citizenship. It is reasonable to assume that the liberal arts colleges have a major responsibility for assisting individuals to reach these objectives. An individual so trained will learn the essentials of communication with others, will know something of the society in which he lives, and other societies, will be able to make sound evaluation and decisions involving areas of controversiality, and will be capable of attaining larger and more inclusive perspectives. All of these factors are essential to the full growth of the individual. Without them it is almost impossible for the educational process to be a continuing one. Mr. Chips, a fictitious schoolmaster, made famous in "Goodbye, Mr. Chips," by James Hilton, received a letter from the parent of a student which said, "After my son finishes his education he will enter my business." Mr. Chips, quite disturbed by this materialistic attitude, exclaimed, "Good heavens, does the fellow think education is like measles—some-

thing you can get over while you're young so that you don't have to be bothered with it afterward?"

Broadly interpreted, a liberal education must include not only disciplines other than the natural sciences but must create complete understanding of the ways in which science and technology have contributed to the advancement of society. Thomas Huxley said: "Education is the instruction of the intellect in the laws of nature, under which name I include not merely things and their forces, but man and his ways; and the fashioning of the affections and of the will into an earnest and loving desire to move in harmony with those laws."[1] The students who insist that "This has nothing to do with veterinary medicine," must be helped to see the cultural implications of their profession and to formulate for themselves a satisfying philosophy of life and practice.

From what has been said thus far, it appears unlikely that such objectives can possibly be reached in less time than is now allotted to earning the bachelor's degree. However, it is quite possible that a more effective pre-professional education can be attained in a minimum number of years, provided that maximum utilization is made of scheduled hours in the classroom.

Crowded Curriculums

Hardly a dean of a veterinary college today has been spared the pleading of specialty groups for adding "just one more course" to an already overcrowded curriculum. The addition of more formal courses to the curriculum, therefore, does not appear to be the answer. Rather, better use of time now allotted as the goal toward which we can work. With particular reference to public health, consideration should be given to the review of the entire four year professional curriculum with a view to incorporating and integrating pertinent public health material into existing courses. A course in parasitology, for example, would under this system include reference to animal parasites of public health significance. Other courses might follow the same pattern. A course designed to summarize veterinary activities and interest in the field of public health, with particular emphasis on public health administration, could be offered to senior students where elective courses comprise a part of the fourth year curriculum. This would provide a rich opportunity for offering interested students seminar-type instruction dealing with specialized facets of preventive medicine.

Opportunities for Continuing Education

We have discussed some of the milestones in the attainment of the degree of doctor of veterinary medicine. It is at this point that the neophyte veterinarian strikes out in a variety of fields, including general practice, pharmaceutical production, veterinary military medicine, public health, teaching and research. With the passing of time he soon realizes the necessity for keeping abreast of newer knowledge, regardless of the specialty in which he may be engaged. The continuing education of a veterinarian throughout his lifetime is essential if he is to understand and use effectively new information related to his field of concentration. There are a number of traditional ways in which this is now being accomplished: reading professional journals, books, monographs, professional contacts, attendance at veterinary meetings, short courses and specialized seminars, individual research projects and the preparation of medical articles. Of importance in this connection is the viewing of films, especially those of a documentary and research nature.

It is singularly appropriate for the subject of continuing education, or postgraduate education as it is sometimes called, to be discussed before the membership of this Association. A cursory review of the types of instruction now available to personnel of the uniformed services reveals a long list of courses dealing with every aspect of military preventive medicine. The course in Veteri-

nary Medicine which is conducted at the Walter Reed Army Institute of Research for veterinary officers of the Army and Air Force, and veterinary officers of foreign nations, has been said to have no parallel in civilian graduate veterinary education. This is but one of many courses of long and short duration which are offered to personnel of the medical departments of the Army, Navy, and Air Force. Others dealing with environmental health, Atomic, Submarine and Aviation Medicine, Preventive Medicine, Clinical Services, are designed to meet the needs of Regular and Reserve Officers and above all, the organizations which they serve. Officers of these services who are assigned to posts requiring specialized knowledge and major responsibility in the field of preventive medicine are given the opportunity for graduate study in a graduate school of public health, leading usually to the degree of Master of Public Health.

The United States Public Health Service, through its Communicable Disease Center in Atlanta, has major responsibility for developing and improving programs for the detection, diagnosis, prevention and control of communicable disease. Toward this end the Center conducts training courses for various categories of public health workers, full and part-time, to equip them for the roles they will play in public health activities. Courses offered at the Center are designed to meet the needs of professional personnel of State and local health departments, the Public Health Service, and related organizations. They have always been open to officers and enlisted specialists of the Army, Navy, Air Force and Coast Guard. This is particularly significant since the Public Health Service has traditionally served to bridge the gap between civilian and military health problems in time of peace and war. As one of the uniformed services, its Commissioned Corps maintains a watchful eye over progress in military preventive medicine and is ever ready to exchange information and strengthen mutual programs in a never-ending search for the answers to some of the public health's most perplexing problems.

Voids in Program

Unfortunately the nation's health, insofar as veterinary medical skills are concerned, is only partially served by what is currently available in veterinary continuing education. The vast majority of our country's veterinarians are engaged in the private practice of their profession. They are busy men with conflicting responsibilities: responsibilities to their families, to their clients, to their communities and to themselves. If they are to serve the health needs of their communities, we must give them tools for doing so—and this involves imparting to them the latest information on all aspects of preventive medicine. A veterinarian who finds himself an elected member of a board of health must be prepared to deal intelligently with problems, some of which he has never met before. The community's aging population and what should be done about it—food supplies—rabies control and the control of other zoonoses—fluoridation of the water supply—immunization plans and policies—school health programs—rehabilitation clinics. These are but a few of the items that may be his day-to-day concern. How is he to be equipped to handle his responsibility? One possible answer might be to encourage schools of veterinary medicine to enlarge their curriculum in public health and preventive medicine. Another would involve encouraging a greater number of veterinarians to pursue graduate study in public health. I am afraid, however, that neither of these plans could be accepted from a practical standpoint—or from the standpoint of desirability. Therefore, serious consideration should be given to the development of a master plan for a program of continuing education for the practicing veterinarian. He is the very bulwark of the veterinary structure now serving as a supporting arm in the public health field.

Courses Now Available

One might be inclined to ask, "What about the postgraduate courses available now under the aegis of our veterinary colleges?" Much good could be accomplished through such existing systems. However, groundwork will have to be laid before these courses will reach maximum effectiveness. As has been said recently, "The professional people who need them most do not bother to attend. Also, too often the courses are conducted in much the same manner as ordinary professional conventions. The first sessions in the morning and after lunch are generally poorly attended; laboratory work is seldom included, and the only lectures and demonstrations that are well attended are those which provide information that will lead to immediate financial returns."[2] This is not an encouraging or bright picture. Nor is it a picture that cannot be remedied.

New Approaches to Old Problems

The American Medical Association, through its Council on Medical Education and Hospitals, recently published an excellent report of a survey of postgraduate medical education. The report makes some interesting observations: for example, three-quarters of all postgraduate hours offered were devoted to lectures, and therefore considered to be didactic. This, despite the fact that returned questionnaires also showed indications of growing interest in the use of participative methods. The Seminar, or small group-guided discussion, was rated as most popular. Strangely enough, a random sample of veterinarians to whom I have spoken recently pointed to this same conclusion. "Learning by doing," has much to be said in its behalf. In the laboratory it is exemplified by the manipulation of things; in clinical work it involves perfecting technical skills, such as operative techniques in experimental surgery, for example; in the seminar it involves the manipulation of facts and ideas in thoughtful discussion.

Indirect didactic methods bear investigation for use in continuing veterinary educational programs. This would include those forms of education that use some intervening medium to transmit instruction from teacher to students at some distance. Examples of this might include radio, telephone, recordings, and visual and auditory stimuli such as filmstrips, motion pictures, and television. Use of this latter medium as an indirect didactic method is not to be confused with its use in demonstrating a particular technique.

Of all the didactic methods available to educational planning personnel, television appears to offer the greatest potential. Although personal contact with the instructor is lacking, television adds active visual stimuli to the values of radio. To date, the use of TV in veterinary continuing education programs has been confined to short telecasts of surgical procedures and laboratory demonstrations. To the best of my knowledge, open channel TV in postgraduate veterinary education has not been employed to date. This method has been used in the medical field by using morning hours earlier than the public was accustomed to expect the station to be operating. Practicing physicians who viewed such programs were, of course, notified by mail well in advance. Methods for preventing the general public from viewing such programs are being devised and await approval by the Federal Communications Commission. Such developments may bring television within reach of the practicing veterinarian and may become a factor of major significance in postgraduate veterinary education.

Training Aids

The instructor in postgraduate veterinary education has the advantage of using a number of effective ancillary education techniques including special blackboards, flipcharts, exhibits, film clips, opaque projectors, microprojections, recordings, and others. When used intelligently by teaching personnel, these aids can stimulate the student to absorb more completely the material under discussion—provided, of course, that they are pertinent to the subjects. The "Incident

Process," developed by Dr. Paul Pigors, Associate Professor of Industrial Relations, at the Massachusetts Institute of Technology, involves the presentation of a problem to be solved by group discussion under a dynamic leader. Such a method could be adapted to veterinary postgraduate teaching if such problems could be mailed to veterinarians in advance of a formal meeting in a community. Reading assignments supplemented by well thought out reading guides have a definite place in this overall program.

Evaluation

No planned program of postgraduate veterinary education would be of value unless some thought was given to methods for evaluating the results of such programs. Methods for doing so are many and varied; yet, none have withstood all known tests of validity and significance. Some have administered tests to students before and after courses with the hope that weak spots in the course might be highlighted. Others have amended this method by testing the student also at suitable intervals thereafter. The general impressions of the instructor and the popularity of courses are in themselves methods of evaluation.

Instructional Staff

Some mention should be made at this point of the qualities expected of the postgraduate teacher. There is a mistaken notion that such people must always be the "experts" in a given field. Hence, some program planners strive to fill the agenda with high powered people who often do not have time to adequately prepare—or who even present out-dated material from tragically shopworn lecture notes. The man who is given a responsibility in the postgraduate teaching program might, therefore, not be famous at all but will always have the ability of analyzing involved subject matter into terms of the needs of the postgraduate student. In the field of public health, such people can be found in schools of medicine, veterinary medicine and public health, state and local health departments, research laboratories, on the staffs of the uniformed services, and in the ranks of veterinary practitioners, themselves.

Needed—Overall Planning

If we agree that an informed profession is vital to the nation's health, then we must also agree that methods must be worked out for offering the veterinarian a continuing education program that is effective, realistic in scope and consistent with demonstrated needs. At the present time postgraduate veterinary education needs long range planning, well-defined objectives and a sound plan for future development. Public health, while the major concern in connection with this discussion, is only one area of the total subject matter which must be offered to the practicing veterinarian—the man on the firing line. In addition, of course, suitable arrangements must be made for handling special groups and categories.

Since much of the progress in this field has been due to creative planning by the uniformed services, it would be advisable for veterinary training officials of the Army, Air Force, and U. S. Public Health Service to cooperate fully with the American Veterinary Medical Association in any efforts to develop a special committee to survey postgraduate veterinary education. I propose that the President of the American Veterinary Medical Association take immediate steps to appoint a special committee to survey postgraduate veterinary education facilities in the United States. Postgraduate education needs to be defined as education not leading to formal advanced standing in the profession, but serving to refresh the professional man in one or more aspects of his profession. A comprehensive report of this type would be the first step toward the establishment of a permanent national advisory group on postgraduate veterinary education.

Conclusion

I have attempted in this discussion to place before you some of the problems related to

professional development, which we in the Veterinary Corps of the uniformed services must understand, if we are to exercise necessary leadership for ultimate improvement of continuing veterinary education. It is important to us, inasmuch as military and civilian veterinary programs are now, and for a long time as far as we can see, very much a part of our preparedness program. Any sudden expansion of the military services will necessitate recruitment of veterinarians from civilian life. These men should be equipped to do their military jobs with a minimum of time lost through additional training. Such planning is vitally important from the standpoint of contributing our share as a profession, to the health and well being of the nation's civilian population.

We should approach this problem with an open mind. No single method, of course, will ever constitute the only answer to postgraduate veterinary education. Mass communication in the professions is a special problem to be solved only on proving grounds which we, ourselves, provide.

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Division Medical Service from the Vantage Point of the Medical Officer

(Experiences Gained During the Korean War)

By

LIEUTENANT COLONEL JOHN A. SHEEDY, MC, *U. S. Army**

THE problems facing a medical officer in combat are many and varied and are indeed unique to his profession. The average physician, both military and civilian, is engaged in a type of practice which provides little opportunity for experience in the field. The few opportunities which are provided through Field School training, maneuvers or other short term exercises, do little more than introduce the problems involved with limited chances of developing judgment and, therefore, the best solutions to these problems.

The medical officer assigned to perform duty with an organization engaged in combat must be well grounded in many ways in order to perform with maximum effectiveness. As an officer, he must possess and exercise leadership. He must be able to adjust psychologically to difficult and discouraging situations and finally, he must be adequately trained in military matters to insure efficient operation of his own unit and to understand directives received from higher echelons. As a physician he is but one of a series of doctors who will care for a single patient. Both medical and surgical problems are seen and these are often of severe and unusual types necessitating a great degree of professional judgment and ingenuity. The frequent occurrence of unfavorable climatic, terrain, tactical and logistical factors compound the difficulties.

With this broad perspective in mind, we shall attempt to review each echelon of the Division Medical Service from the vantage point of the physician and point out the military and medical responsibilities involved. It must be pointed out that our remarks are based on experience in Korea with a division engaged in a relatively stable tactical situation wherein forward, retrograde or lateral movement was not present, and enemy air forces were not involved.

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BATTALION MEDICAL PLATOON

The Battalion Surgeon as a staff officer to the Battalion Commander advises him regarding the sanitation and preventive medicine measures necessary for the unit, as well as the proposed location of the Aid Station. If hot meals are served, rigid sanitary controls must be exerted regarding the preparation and distribution of food. Epidemics of food poisoning are surprisingly infrequent; nevertheless, the possibility is ever present in front line troops. In periods when the battalion is not engaged in attack or counterattack, routine sick call is an important daily feature and occupies about 50 per cent of the time. During heavy engagements few men report with medical illnesses and the doctor is almost constantly busy with the care of battle casualties. Fatal cases are inspected and the cause of death recorded by the Battalion Surgeon after which they are evacuated by the Graves Registration Unit. It should be noted that the percentage who are killed in action among all those hit (the number killed in action plus the number of wounded or injured in action, including those dying of wounds or injuries) has remained practically unaltered despite the marked reduction in the case fatality rate for wounded or injured in action cases admitted to medical treatment facilities.

In the treatment of casualties, judgment is required in knowing how much to do and when to evacuate. When the flow of casualties is heavy there is no time for suturing of even small lacerations or the probing for

small fragments in spray wounds. Psychologically, it is best to evacuate all wounded unless the tactical situation is critical, requiring lightly wounded to continue fighting. The identification of bleeding vessels and the control of bleeding by clamp, ligature or pressure; the initiation of blood or other volume expanders in the treatment of shock; the immobilizing of fractured, wounded or badly sprained extremities; the establishment of adequate ventilation and the giving of penicillin, tetanus and morphine are the principal professional functions of the Battalion Surgeon. This requires a practical knowledge of tracheotomy, thoracentesis and tracheal intubation as well as an understanding of shock and the use of various types of fluids. It should be emphasized that intravenous therapy, once begun, should not be discontinued until the patient reaches hospital care.

Regimental Medical Company

The Regimental Medical Company, though considered to be within range of direct enemy fire, is seldom so except in active combat operations. The Collecting Station of this company receives the casualties from three Battalion Aid Stations. By virtue of its more rearward position casualties may receive somewhat better preparation prior to their evacuation to the rear. Lightly wounded may be kept for a day or two and be returned to duty. The general function of this unit is, therefore, to complete the job of emergency medical treatment and prepare for evacuation to the Clearing Company of the Medical Battalion. The Collecting Station is also responsible for conducting sick call for the Regimental Headquarters and the units attached or lateral to it, except for the Artillery.

The officer personnel of this company consists of a Medical Officer Commanding, two medical officers in the Collecting Platoon, a Medical Service Corps officer as the Executive Officer and a Medical Service Corps or Warrant Officer as the Mess, Motor and Supply Officer. Two additional MSC officers command, respectively, the litter bearer and ambulance sections. This is one of the two situations wherein a medical officer is a Company Commander. As such, he must be familiar with such administrative functions as duty rosters, guard rosters, court-martial procedure, company funds, company property, reconnaissance and concealment, as well as have a working knowledge of mess, motor and supply procedures. The selection of principal and alternate routes of evacuation is especially important. It is his responsibility to see that his subordinates are trained to carry out these duties and that he check to see that they are carried out. Supply includes not only supply of the unit but also medical items for the Collecting Station as well as the Aid Stations. Blanket packs, litters, splints, bandages, penicillin, tetanus toxoid, ordinary dispensary medicaments and instruments and whole blood or volume expanders are among the most important items. Sufficient equipment to set up an auxiliary or forward Collecting Station must also be on hand. The medical officer in charge of the Collecting Station in general handles all casualties, but in active combat the Regimental Surgeon frequently assists. Dental Officers are usually attached to the company and they are also utilized in emergency situations. In addition to the organic vehicles of the company, one platoon of ambulances from the Medical Battalion may be attached.

Medical Battalion

The Medical Battalion, being the most rearward echelon of the Division Medical Service, has the greatest burden of administrative and professional responsibility. Its location in the proximity of the Division Headquarters is at the extreme or beyond the range of enemy artillery which, therefore, permits a more elaborate physical plant within the limitations of mobility and tactical considerations.

The medical officer personnel consists of the Battalion Commander, the Clearing Company Commander and two general duty

medical officers as well as one general surgeon with each of the three clearing platoons. The Division Psychiatrist and the Division Dental Surgeon, although not assigned to the Medical Battalion are usually attached to the unit and these, with the remaining dental officers, complete the professional complement. Medical Service Corps officers perform duties as Executive Officer S1, S2-3, S4, and as assistant Clearing Platoon leaders, as well as Ambulance Company and Headquarters Company Commanders.

The Battalion Commander is primarily a unit Commander and his principal duty is to insure adequate function of all units, especially the Clearing Company, the major unit of the Medical Battalion. It is also essential for him to supervise and coordinate the functions of his staff, the remaining companies, and to have close liaison with the Division Surgeon and the Regimental Surgeons. Firsthand information gained by personal visits to Collecting Stations regarding the supply, casualty and tactical situation, is more reliable than uncertain comments of others. On the other hand, it is essential that the commanders of the various companies and the special staff be permitted to analyze their own problems and submit proposed solutions to prepare their own future as leaders and lighten the burden of the Battalion Commanding Officer. In extreme emergencies he may be required to assist professionally, but in general, he should not assume these duties, thus preventing the establishment of reliance on his help and permitting him full exercise of command and liaison.

The Clearing Company Commander is primarily a commander of a large and active company. Like the Commanding Officer of the Regimental Medical Company he must be cognizant of the administrative aspects of his company and in emergencies may be expected to devote some time to professional work.

The role of the medical officers assigned to the Clearing Company is almost entirely professional. In movement, however, they function as Platoon Leaders and assist in the loading and setting up of equipment in a new location.

Division Surgeon

The senior medical officer of the division is usually the Division Surgeon. He is a part of the special staff of the Division Commander. His duties are advisory to the Division Commander and in order to perform this mission must maintain close liaison with the Regimental Surgeons and the Medical Battalion Commander. His command function is normally limited to his immediate assistants, unless otherwise directed by the Commanding General.

Organization of the Clearing Company for Combat

In active combat, where the tactical situation dictates at least the possibility of considerable movement, the Clearing Company is capable of deploying each of its three platoons, each in support of an infantry regiment, or of leapfrogging them to support the actively engaged combat units. When defense is the primary mission and movement is not expected and the regiments are not widely separated, the use of the Clearing Company as a single unit is more advantageous. Further, if the Clearing Company is permitted to perform primary debridement and definitive surgical treatment on the mildly wounded, many professional and particularly administrative problems arise.[1] The wisdom of providing definitive surgery at division level can readily be appreciated not only from the standpoint of earlier and, hence, better treatment, but also from the economy of personnel which results. These same remarks apply equally well to the mildly and moderately ill, non-battle injuries. It is to be re-emphasized that although many advantages can be realized by the performance of definitive surgery at division level, it is not our intent to recommend this under all, or perhaps the usual, combat situations. Since this course of action may be considered somewhat unorthodox,

we consider it particularly important to record the results of our experiences.

It is fundamental that in addition to the primary care of patients, the additional duties of administration, mess, motor and supply must also be accomplished. Under current Tables of Organization and Equipment, a Clearing Company has about 125 enlisted men. It was found that about half of these were required for the professional function of this unit when large numbers of casualties were being received. All personnel, including the officers, were placed on a 12-hour shift and no one was permitted to work longer, since, in sustained action, efficiency will be reduced.

As patients were admitted they were categorized by over-all clinical impression as being mildly, moderately or severely wounded. The mild patient had either single or multiple injuries but no bone, artery or nerve involvement and no penetrating head, spinal, chest or abdominal wound. It was further presumed that this type of patient could be returned to duty within ten days. These were kept at division level, providing they were able to walk. The provision of walking is important since patients must be able to get their own food and there is insufficient organic transportation for litter patients in case rapid evacuation is required.

Moderately wounded were those who could safely be transported to the rear, usually by rail, and who had wounds that would normally be expected to require more than ten days to heal. About one-third of these cases were initially thought to be mildly wounded but because of the finding of more extensive wounds at the time of debridement, were evacuated. This type of patient must have a stable vascular status prior to rail evacuation.

The severely wounded patient is easily recognized by the presence of fractures, hemorrhage, shock and penetrating wounds as enumerated before. The presence of penetrating head, spinal, chest and abdominal wounds frequently places a patient in a critical category and warrants helicopter evacuation, provided shock has been alleviated. In our experience, about 10 percent of all casualties absolutely demanded this type of evacuation, however, only about 7 percent were so evacuated. The helicopter, although of great value in general, is of limited value in the absence of control of the air, or in the presence of rain, heavy ground fog, and heavy artillery fire. The limited number of planes, the long routes of evacuation, the maintenance requirements and the invariable difficulties in communication are additional limiting factors. Ambulance evacuation, therefore, remains the standard and for the severely wounded permits frequent examination which may be important in over-all treatment. All patients in this category were sent to Mobile Army Surgical Hospitals where early, definitive surgery of a major type was performed. The extremely low wounded case fatality rate of 2 percent confirms the wisdom of present evacuation and treatment policy.

It can be seen, then, that the total load of the Clearing Company is not entirely reflected by the patients retained. But if only the mild cases are considered, what problems arise? The hospital area (Fig. 1) is set up with a Receiving Ward, a Preoperative and Postoperative Ward, the Surgery itself and convalescing wards. A small and separate Neuropsychiatric Ward should also be set up for the Division Neuropsychiatrist. The total number of convalescent beds should be about 100. This is probably the maximum number of individuals that can be conveniently cared for by the available technicians, can be evacuated hastily if necessary and will not place undue burden on the mess facilities of the company.

At the time of operation the surgeon decides whether the patient is in the mild or moderate category and if mild, returns him to the Postoperative or Convalescent Ward. After 100 mild patients have been admitted, any further increase in the census requires that some of these be evacuated. In general, the lowest enlisted grades are evacuated first, with every effort made to retain commis-

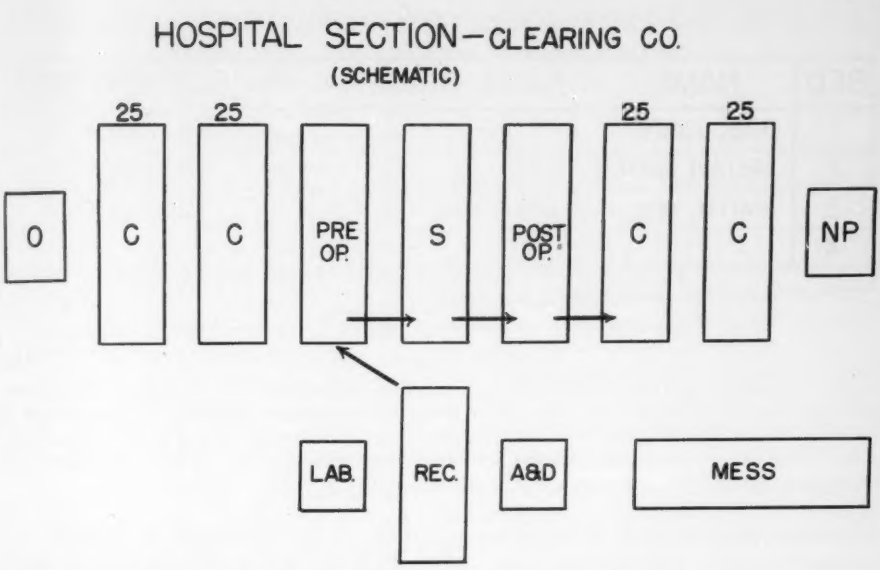

FIG. 1. Schematic Diagram of the Hospital Section of the Clearing Company.
O—Optical Unit (attached)
C—Convalescent Ward (25 bed)
NP—Neuropsychiatric Ward
S—Surgery
Preop—Preoperative Ward
Postop—Postoperative Ward
Rec—Receiving Ward
(Total holding capacity—100 patients in addition to a few NP cases.)

sioned and non-commissioned officers.

To insure that adequate records are kept, regarding admission and dispositions as well as data for the Award of the Purple Heart and the hour-to-hour census of all wards, a competent and experienced sergeant should be designated non-commissioned officer for each shift. In Figure 2 is depicted a sample Convalescent Ward Roster. This is a board on which the appropriate headings and lines have been inscribed and the current data put on an acetate overlay. The final decision regarding evacuation, as well as the handling of any other problems, rests with the Clearing Company Commander or his Administrative Assistant.

MEDICAL CONSIDERATIONS

All admissions to a Clearing Company engaged in combat from 1 August 1952 to 14 July 1953 were analyzed in regard to type of admission. The number of battle casualties constituted about one-third of the total and showed little variation from week to week except for the occurrence of major engagements. The number of medical illnesses also presents a fairly constant picture, except for a rise in late summer and early fall. The admission rate during a period of intensive training was about the same as when the unit was engaged in battle. During the largest and last major encounter, that of the defense of Porkchop, somewhat over 1000 casualties were evacuated to the Clearing Company and of the evacuees, slightly over one-quarter were graded as mild. A little over one-third were considered moderately wounded and slightly over 37 percent were severe. Of this latter group 25 had head wounds, 38 had chest wounds and

CONVALESCENT WARD ROSTER

BED	NAME	RANK	PRIORITY	PH	SURGERY DATE
1	DOE, JOHN	PVT.-2	1	X	14 JULY
2	BROWN, JAMES	SGT.	2	/	15 JULY
3	SMITH, Wm.	CPL.	1		15 JULY
4					

FIG. 2. Headings and lines are inscribed on a board and entries are made on an acetate overlay. *Priority* refers to order of evacuation. *PH* refers to the Award of the Purple Heart. One line is made when the patient is recorded for the award and the cross line when the award has been presented. Surgery Date refers to the date on which either primary debridement is accomplished or secondary closure performed, as indicated.

12 had abdominal wounds considered severe enough to warrant helicopter evacuation and immediate surgery. Approximately 85 other individuals were evacuated by helicopter and were not seen at the Clearing Company; these are not included in the tabulation.

It would appear that multiple wounds, as well as the severity of individual wounds tend to increase over all morbidity and mortality as one would expect.[2,3] Wounds of

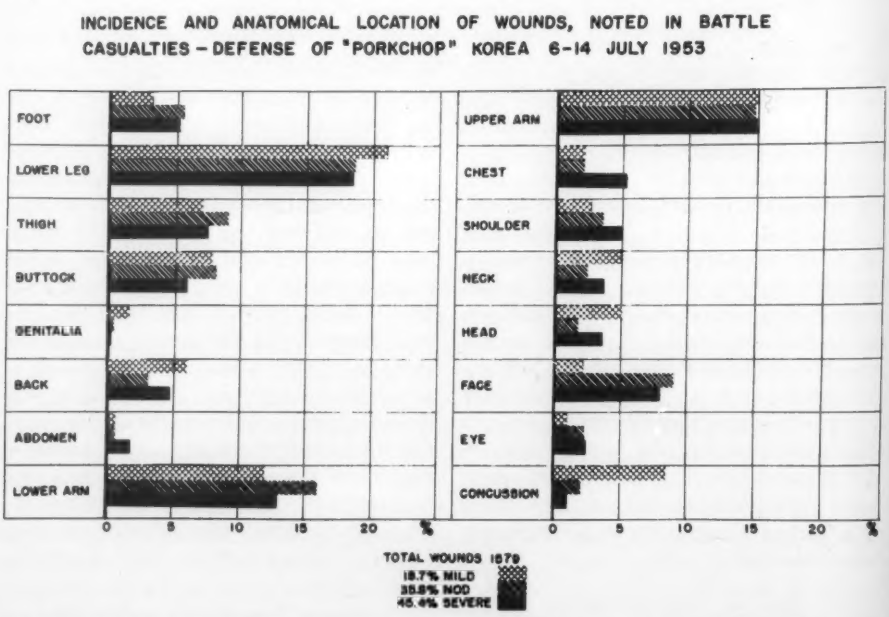

FIG. 3. Wounds of the extremities were the most frequent. Only a very small percentage of the wounds were abdominal, these were usually severe, as were wounds of the head, chest, and face. Concussions were usually mild.

the extremities were found to be the most frequent as opposed to the body as a whole (Fig. 3). The use of the armored vest has significantly reduced the occurrence and severity of chest wounds. Only a very small percentage of wounds of the abdomen occur, but when present are severe. Wounds of the face, particularly of a severe nature, frequently occur. Concussion is also seen often, but results in only mild and temporary non-effectiveness.

It was also of interest to determine whether or not the severity of injuries increased as the battle became prolonged, but no significant change could be detected. It was of interest to note that there were only a few neuropsychiatric cases for the first five days, but the incidence increased significantly thereafter. The relationship of rank to those wounded showed that wounds occur in exactly the same proportion as the table of distribution of rank.

Conclusion

It should be reiterated that a physician serving with a division must on the one hand be familiar with certain basic concepts of command function, and administrative and staff procedure, while on the other hand he must be prepared to cope with many types of medical and surgical illnesses. Both the military and professional responsibilities encountered occur under hazardous and difficult conditions and tax even the best of individuals to the maximum.

Summary

A. The principal duties of the medical officer in a division engaged in defensive combat are reviewed.

B. Experience is cited in the organization of the Clearing Company for combat operations, wherein definitive surgery is conducted at this level on mildly wounded patients.

C. Experience with an Infantry Division in active combat demonstrated that about one-third of the non-effectives were the result of enemy action.

D. In the defense of Porkchop, a significant number of battle casualties were treated and permitted analysis of the regions of the body wounded. Wounds of the extremities were the greatest cause of disability. About 10 percent of the casualties were considered to be critically wounded and were felt to be absolute indications for helicopter evacuation.

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Reserve Officers of the Medical Services may earn credit points by attending the 63d Annual Convention of our Association at Hotel Statler, Washington, D.C., Nov. 12-14.

The Army Medical Service in Korea

By

COLONEL FLOYD L. WERGELAND, MC, *U. S. Army**

Colonel Wergeland, a native of Montana, began his early military career with the Infantry, ROTC, Northwestern University in 1921; 1st Lt. Med.-Res. February 1933 while resident physician San Diego County General Hospital, San Diego, California; active duty 28 April 1933 with CCC; and received appointment 1st Lt. Regular Army Medical Corps 2 July 1934. He graduated from the Army Medical Service School 1935; The Infantry School 1939; The Command and General Staff College 1941; and The National War College 1954. Col. Wergeland received his medical degree in 1932, from the College of Medical Evangelists. The majority of his military service has been devoted to medical military training and education, and includes such assignments as instructor at The Medical Field Service School; Training Officer and Executive Officer of the Medical Replacement Training Center, Camp Barkeley, Texas; and two assignments as Chief of Education and Training Division for the Surgeon General's Office. He is considered largely responsible for the initiation and continued development of the highly successful Army Medical Service's medical professional training program following World War II.

Colonel Wergeland was on duty in Korea as Surgeon Korean Communications Zone. Later, and just prior to his assignment to the Advanced Operations Research Department, Command and General Staff College, Jan. 10, 1956, he was Surgeon USAFFE/United States Eighth Army with headquarters in Seoul, Korea. During his two assignments in Korea his interest in extending the benefits of efficient medical professional training to civilian and military medical services of other free nations is reflected by this article.

(U. S. Army Photo)

Col. Floyd L. Wergeland, MC, USA

OUR United States Army Medical Service has provided medical assistance to the good people of the Republic of Korea which has alleviated conditions of incredible hardship and suffering. Grievous blows were struck against that small country during the years of invasion and combat. The United States and its allies have extended highly valuable aid in many fields seeking to restore this retarded but courageous people to an acceptable standard from which it can enter the future with chances of success. While the whole story of post-hostilities assistance inspires pride in what has been accomplished, the purpose of this article is to present a brief summary of some of the health conditions which were encountered, and the corrective measures which were provided or encouraged.

The reconstruction and supply mission for rehabilitating the Republic of Korea was known as the "Armed Forces Aid to Korea Program" or "AFAK" as it was commonly abbreviated. Through this organization of humane purposes very important measures were accomplished which meant a better life for large numbers of Korean civilians, men, women and children, whose outlook had been without hope. They could not solve their problems unaided. The Army pitched in to help.

In addition to the building assistance from the AFAK Program, the United States Army provided directly or indirectly the following principal medical missions:

Emergency medical and surgical treatment.

* Advanced Operations Research Department Command and General Staff College, Fort Leavenworth, Kansas.

Teaching and demonstration and on-the-job supervision of Korean doctors, nurses, and technicians to help them accomplish more.

Provision of supplies for their existing medical facilities.

Technical assistance and guidance in building and equipping new and badly needed medical facilities.

Dispatch of special teams of doctors, nurses and technicians through Republic of Korea Army hospitals to assist in diagnosis and treatment.

Medical care and teaching assistance received from the Swedish Red Cross Hospital and the German Red Cross Hospital.

Medical Research projects to correct conditions unique to Korea, and to improve medical services in the conduct of modern warfare.

The integrated discussion which follows includes, in the majority, the activities of the Army Medical Service in relation to the above subjects, and should not detract from, but rather make clear that, the total United States Army as a large and friendly force contributed in proportionately greater magnitude toward rehabilitation. All shared in this humane undertaking; by technical and material aid to AFAK; by technical supervision; by many volunteers on their own time; and by virtually every member of the Army generously giving cash donations, repeated over and over again. Without publication these great contributions would be first lost, and then forgotten forever, failing to give the U. S. Army due respect and credit for highly important peacetime work.

The Army Medical Service of the United States Army is now over 181 years old. It is a tremendous organization in itself. Like the Army, its enviable and traditional history has many outstanding accomplishments. The Army Medical Service is only one part of the "greatness of force" which the United States Army possesses. It is therefore a vital component of a worldwide deterrent force.

The fact that our Army is deployed in many of the overseas areas, is a declaration of national intent which gives courage to our Allies and gives warning to potential aggressors, whether large or small. Accordingly General Maxwell D. Taylor, our present Chief of Staff summarizes, "the U. S. Army is a force which has the strategic and tactical versatility required to gain control of the resources derived from the soil of the enemy." "It can proportion its blows to fit cases—from the MP's truncheon to the kilotons of atomic weapons." *"It can temper its destructive power to the aims and needs of the post-war peace."*

During combat activities in the medical service it is standing operating procedure (SOP) to evacuate patients to the zone of the interior (the Continental United States) if there is little chance for their immediate recovery and return to duty. With an army area evacuation policy of 15 to 30 days, the patient turnover in Korea was at times rapid. Patients in forward areas were given resuscitative treatment, medical or surgical, until they could be transported safely to rearward medical installations in Korea or Japan. In addition to providing medical service to its own forces, while stopping the invasion in Korea, the U. S. Army assisted the Army of of Republic of Korea with its medical service in a technical advisory, medical supply, and medical equipment capacity. During the lull periods of the warfare in its various aspects, the U. S. Army Medical Service personnel found the opportunity to assist many civilians and civilian agencies in Korea. Ambitious army medical officers, nurses, administrators and technicians became involved in teaching and treating civilians which ultimately was in fact a benefit to the Armed Forces of the United Nations by improving environmental sanitation and by preventing epidemics. Such measures included immunization procedures, water purification, and insect and rodent control—all on a large scale.

During the past two years there has been much activity on the part of the Army and other civilian agencies filling their roles in the needs required by the "Post War Peace" in Korea. However, this word peace should be modified because Korea is supporting a tremendous army in order to continue the

"Peace" or "Armistice." Units of the Republic of Korea (ROK) Army are holding the lines, on and above the 38th parallel with assistance of United States' and other United Nations' troops.

In conjunction with many other United States'/United Nations' government agencies, the Army is providing effective protection and realistic assistance in many general fields of endeavor, including medical, for the Koreans. These far-sighted efforts are highly important to the future stability of the Korean government, health, economy, and industrial growth. Valuable co-assistance was given to United Nations' forces by many years of fine and devoted work of Christian missionaries preceding the United States' Army Medical Services in Korea. Many of the missionaries are highly regarded representatives of the United States' citizenry. Some are former active members of our Army who are now in different working clothes.

The author was closely associated with the "Armed Forces Aid to Korea Program (AFAK)." While surgeon of Korean Communications Zone in Taegu and Pusan, 1954-55, he was deputy director of the AFAK Program for Medical. The Army did do everything in the light of evaluation given by staff and command, and such experienced assistance as was available locally to direct AFAK medical assistance on an absolute parity for all Korean recipients. Through AFAK, the United States Army aided with the construction of, the equipping of, and the providing of supplies for many medical or public health facilities, both civilian and government. The Army has provided, when needed, many types of specialized technicians as well as the many technical supplies and equipment. Medical equipment maintenance technicians have been provided to identify, repair, and install medical and laboratory equipment. A number of Army medical supply groups have been used to identify, inventory, and set together equipment which arrived in Korea from the various United Nations countries under the UNKRA (United Nations' Korean Rehabilitation Agency). Army medical advisory members of the Korean Military Advisory Group, a United States Army Unit, have been on duty throughout Korea since World War II.

In addition to the Korean Military Advisory Group Medical Teams, members of the Korean Communications Zone Medical Service and Eighth Army Medical Service contributed thousands of additional hours of teaching and advisory instruction to the Republic of Korea Army medical installations and facilities. Shortly after the Armistice the Army arranged to send medical teams of officers, nurses, and technicians through all the Republic of Korea Army Hospitals, assisting them in making diagnoses and to carry out long-awaited and necessary treatment, both medical and surgical. Long-term cases which were expensive to the Republic of Korea Army were given especial attention. By this effort remarkable recoveries were made with a resulting reduction of several thousands of patients.

Consistently with this diagnosis and treatment assistance, there was effective teaching by demonstration and by the on-the-job supervision of Korean doctors, nurses, and technicians. This service has continued right up until the present time, and certainly will, while the Army has adequate medical personnel in Korea. A continuous medical consultation program has been conducted to the limit of the Army Medical Service numerical ability in some civilian hospitals in Seoul and elsewhere.

There is a professional nursing advisory assistance to the Republic of Korea Army. The immediate result of this advisory effort is the institution of professional training courses for nurses in some of the best ROK Army large general hospitals in Seoul, Taegu and Pusan. Their nurses are eager and anxious to learn. Nurses from outlying hospitals will rotate through these designated teaching hospitals. In the U. S. Army Medical Corps, nurses who are effective teachers have been employed for training technicians in many of the phases of medical and sur-

gical treatment activities. This advisory effort in Korea is anticipated to result in progressively better professional and practical nursing care in the ROK Army. Without good nurses and technicians as teachers in the ROK Army, it would be rather difficult to expect the degree of success necessary to obtain or maintain first class medical care and treatment in Korea as is demanded by western medicine.

The Swedish Red Cross Hospital and the German Red Cross Hospital taking care of Korean civilian charity cases in Pusan, are both outstanding medical teaching units. Both are attached to the Eighth United States Army for logistical support. To supplement their own staffs, these hospital units employ Korean doctors, nurses and technicians whom they train in taking care of Korean civilians on in-patient and out-patient services.

The German Red Cross Hospital now has a formal and effective three-year training program for nurses. They have 45 student nurses in the two classes training currently and will add another class of 25 in April 1956. It is anticipated the Scandinavians will enlarge their formal programs for technicians, nurses, and doctors when they staff and support a newly built 450-bed medical educational center in Seoul in January 1958.

There have been many special "AFAK" construction projects which were designed primarily for clinics, hospitals and medical facilities which would serve specifically the community or the organization which sponsored them. This is not news to the missionaries with whom Army personnel have had the privilege to work so successfully. Without assistance and information available from the various local missionary agencies on the spot in Korea, a great deal of Army money, materials and effort might have been squandered uselessly. Those folks know the Koreans, their customs, their thinking, their local politics, and most of all their real needs. They were able to convert those genuine needs into terms the Army could apply.

Much good has resulted and more results will be evident long after our current Army AFAK projects in Korea are completed. Though many have been completed, a large number are far from finished. It will take years to evaluate the full humanitarian and health benefits but they will come. One can safely believe and know that it is gratifying to be an American citizen. An American citizen has individual rights and privileges which he can abuse or respect, as he himself chooses. By choosing kindness, charity, and usefulness, United States military citizens in Korea and in other countries too, have done much to reveal to the less fortunate world citizen the fruits of the principles on which our God-fearing nation was established. Citizens can be grateful for the contribution our Armed Forces have made world-wide to the human values of Christianity and democracy. More especially the Army Medical Service peacetime function in a place like Korea may to a large extent be classed as military missionary medical work.

Herewith is a list of some of the Armed Forces AFAK projects constructed for medical purposes:

a. Hospitals	53
Dispensaries	15
Health Centers	13
Clinics	11
b. Cost material for medical construction, AFAK	$1,220,581.00
c. Cost of AFAK medical supplies and equipment	520,786.00
d. Medical assistance program (teaching and treatment)	
(1) Value of professional services to ROKA	250,724.07
(2) Value of professional services to Korean civilians	373,811.60
(3) Cost hospitalization (Korean civilians) @ $12.44/day	591,322.96
(4) Cost medical supplies (Korean civilians) hospitalized	109,803.54
(5) Cost out-patient treatments (Korean civilians) @1.75/ treatment	390,917.50

NOTE: Dollar values established by official publications and directives.

The following figures will give you a brief look at some estimated statistics developed from United States Army Medical Service

consultation and teaching services to the Korean Army:

	Man Hours of Instruction to ROKA	Man Hours Professional Service to ROKA	Man Hours Professional Service to Korean Civilians	Surgical Operations to Korean Civilians	Laboratory Procedures to Korean Civilians	Out-Patient Treatment of Korean Civilians in Army Hospitals
1954	36,334	81,018	127,906	12,435	66,467	184,624
1955	92,267	6,558	11,464	1,779	14,659	38,758
	128,601	87,576	139,370	14,214	81,126	223,382

NOTE: Figures above are consolidation of KComZ and Eighth Army.

If to the above is added the continuous on-the-job training which has always been conducted in United States Army Hospitals for Korean personnel who are employed (direct hire) by United States, and for the Korean Army personnel attached to United States Army Units (KATUSA) for training and duty, there are many more thousands of teaching hours to account for. The latter group of Korean Army personnel are distributed to all types of U. S. Army units, and medical troop units receive their proportionate share.

The information in preceding paragraphs represents extracurricular duties. As regular duty, during the war the Army Medical Service personnel treated about ninety thousand military casualties as well. Currently there is an approximate daily average of 400-425 American United Nations patients in the U. S. Army Hospitals in Korea, exclusive of several thousand troops who are out-patients each day.

Army medical personnel in isolated and in the needy areas have contributed their individual professional services as well as personal funds to the care of civilians, especially women and children left destitute and crippled by war.

The U. S. Army I Corps stationed at Oiujan Bu, raised a special fund of $75,000.00 which has been set aside in trust and managed by the I Corps Surgeon as chairman of the board, expressly to take care of children maimed by war or accidents incident to Armed Forces activities north of the Han River. The medical section of Headquarters Korea Communications Zone collected some $2,000.00 and more from the headquarters command of Korea Communications Zone under Major General Edward J. McGaw. The Korean Communications Zone was deactivated in June 1955, and the area and mission turned over to the Eighth U. S. Army, currently commanded by General I. D. White, with headquarters in Seoul. With this money, plus $250.00 from the U.S. Army Surgeon General's Office and the professional assistance of the Presbyterian Hospital Mission in Taegu, operations and artificial limbs were provided for 40 amputee patients existing at "the Home for Disabled Persons" in Taegu, Korea.

While the Army Medical Service is in Korea, many such kind professional acts and good medical projects will continue for the Koreans. These will extend from the front-line north of the 38th parallel to Pusan. Our medical personnel are enjoying it too. Occasionally, when exigency makes it absolutely essential, a little medicine and some medical officers' time is provided by the United States Army, and by the reader and the author indirectly as tax payers. But there isn't any anti-communist work which gives better and more certain dividends. The following tables offer a quick look at the Koreans' medical abilities.

The majority of the medical research projects carried out by the Far East Command since the Korean conflict have been physically conducted in Korea. Medical, surgical

TABLE 1. MEDICAL RESOURCES AND GENERAL MEDICAL SITUATION IN KOREA

(From *KCAC by Col. Milford T. Kubin, MC, U. S. Army Surgeon, KCAC)

PERSONNEL RESOURCES IN 1955:

Population 21,500,000; 48,000 orphans (437 orphanages); 5.5% of population considered tuberculous; 98% have parasitic infestations; infant mortality very high; life expectancy early forties; 70% illiteracy.

5,900 doctors (a ratio of 1 to 4,376; in Seoul ratio is 1 doctor per 1,250 persons).
2,250 nurses
930 dentists
2,000 midwives
1,500 registered pharmacists
2,000 herb doctors

NOTE: Less than 3% of the medical personnel here mentioned are highly qualified. There are currently 127 Korean doctors training in foreign countries. Korean training is mostly didactic and there is need for practical training.

*Korean Civilian Assistance Command, commanded by Brig. Gen. Mercer C. Walter, U. S. Army.

TABLE 2

FACILITY RESOURCES:

7 Medical Schools:
Pusan University School of Medicine, Pusan
Kwanju Medical School, Kwanju
Taegu Medical School, Taegu
Severence University Hospital, Seoul
Ewha College School of Medicine for Women
Seoul Women's Medical College, Seoul
Seoul National University School of Medicine, Seoul
1 Dental School at Seoul University
22 Nursing Schools (one is a postgraduate nursing school conducted by KCAC)
8 Pharmaceutical Schools
11 Public Health Centers (one for each Province)*
552 Public Health Centers (dispensaries)*
10 Tuberculosis Hospitals with a bed capacity of 3,580
2 Mental Hospitals
12 Leprosaria with a capacity of 14,000 (45% of health budget goes for leprosy. Estimate of leprosy cases vary from 24,000 to 200,000.)
21 Leper colonies with a capacity of 3,423
3 Preventoria with a capacity of 519

*1,872 infants and mothers received prenatal and postnatal care by these facilities in 1955.

TABLE 3

PROGRESS DURING RECENT YEARS:

Koreans will soon be able to produce all their biologicals for immunizations with the exception of about 20 per cent.

People now insist upon immunizations for smallpox, typhus, and typhoid.

There has been no smallpox in the last year, and typhoid is down markedly.

The Korean Government plus AFK, UNKRA, KCAC, OEC, ICA and AFAK have expended $32,704,000 for public health assistance, which is in addition to what has been done by 53 voluntary agencies, 45 of which are organized into KAVA (Korea Association of Voluntary Agencies).

Missionary medical services in the over-all have been significant and wonderful but have only scratched the surface of all the requirements.

Swedish Red Cross Hospital: 250 Korean charity patients, 50 UN patients, on-the-job training for Korean doctors, nurses and technicians.

German Red Cross Hospital: 300 Korean charity patients. Formal training of nurses. Semi-formal and on-the-job training for Korean doctors and technicians.

TABLE 4

FUTURE ASSISTANCE SCHEDULED SO FAR:

1. 1956 budget calls for $2,430,000 of medical supplies and $1,500,000 for sanitation and medical facilities. $500,000 in addition will be spent for technical advice and assistance.

2. ICA (International Co-operative Administration) to take over Public Health Service with a chief advisor at each bureau level and technical advisors instructing in each critical medical field area.

3. Missionary services, KAVA, ICA, AFAK, UNKRA, AKF, GRC, and SRC will continue.

4. Many new public and missionary schools built. It is planned that all children will be able to go to school. Day and night classes conducted in majority of schools.

5. Scandinavian countries (Norway, Denmark and Sweden) will supervise and finance the operation of a 450-bed hospital, and staff it with teachers in medical fields to establish The Scandinavian Medical Education Center, Seoul, 1 Jan. 1958. In meantime Swedish Red Cross Hospital in Pusan will continue.

and laboratory research work such as the use of the artificial kidney, early debridement of wounds, and helicopter evacuation in the combat areas have shown much improvement in the following procedures: treatment of shock; treatment of acute hemorrhagic fever; treatment of compound fractures of the long bones; acceleration of wound healing; treatment of burns; prevention and treatment of cold injuries; treatment of various dysenteries; treatment of acute infectious hepatitis; the treatment of venereal diseases; and the treatment of lower nephron-nephrosis.

TABLE 5. RESULTS OF ARMY MEDICAL RESEARCH IN KOREA

1. Reduced Army incidence of epidemic hemorrhagic fever in Korean and UN personnel by over 50% and reduced case fatality rate (deaths per 100 cases) by about the same amount.
2. Reduced malaria incidence of returnees to USA from 10,000 per year to potential* zero.
3. Reduced loss of limbs by amputation through new techniques of vascular surgery.
4. Developed use of 2 substitutes for morphine: methadone and I-iso methadone.
5. Developed design, adoption and standardization of body armor.
6. Developed helicopter ambulance units for rapid safe evacuation.
7. Developed improvements in treatment of shock and lower nephron-nephrosis.
8. Developed and improved techniques in use of insecticides and miticides.
9. Developed antibiotic treatment for Shigella and amebic dysenteries.
10. Tested and proven for use (a) Universal Protective Dressing, (b) Dextran, (c) Plastic Bags for blood and dextran.
11. Extensive studies on (a) cold injuries; (b) hepatitis; (c) Japanese B encephalitis—discovered spread by bite of culex tritaeniorhynchus; (d) colloids to develop safe, cheap, stable, effective plasma volume expanders which can be stockpiled in large quantities (see (10) above).
12. Continued practical professional training for residents and specialists under accelerated conditions.

* Any incidence reported is generally a failure on the part of the individual to comply with prophylactic measures of military authorities in Korea.

An armored vest, light enough to be worn by the combat soldier, was developed with resulting marked reduction of multiple serious wound of the neck, axilla, lower abdomen and groin. As a result of this active medical research and experience in the treatment of wounds, early rehabilitation and life-saving recovery among wounded reaching medical facilities has approximated 97%, an all time high, showing marked improvement over World War II.

In the field of preventive medicine, Korea has been a real large research laboratory field among all United Nations Military Forces stationed there as well as for the Koreans. Practical realistic methods have developed for the dusting of insecticides; spraying for mosquitoes and other insects; miticiding of clothing; killing of rodents; purification of water; shipment, handling and protection of perishable foods; handling and disposal of garbage and refuse; sewage disposal; and chemical fertilization.

The over-all experiences and research in the Korean conflict and its post-Armistice era, are unique in the history of the United States Army Medical Service, despite the fact that there is scarcely an area of the entire medical field which does not leave room for further improvement. Whether one is a missionary, medical officer, dietitian, psychologist, orthopedist, hospital administrator, internist, economist, industrialist, politician, or a specialist in preventive medicine, the land of Korea presents a challenge to intelligence, patience, curiosity, and ingenuity.

There is opportunity in medical areas to: teach in medical schools, clinics, and hospitals; perfect techniques in the orthopedic and acrylic eye laboratories, appliance shops, exercise halls, chemical laboratories, blood banks and dispensary services; treat lepers, disabled persons, and many cases with tuberculosis or parasitic disease; and to assist the medical missionaries already overworked.

The Army Medical Service assistance in Korea seems to grow numerically smaller day by day. However, past education and train-

ing will help keep medical progress active.

The Americans, especially United States Army personnel, would all enjoy seeing Korea, a small country, grow in education, health, national posture and self sufficiency to emulate the smaller, progressive countries of Europe, such as Sweden.

As Americans of the Army Medical Service have helped Koreans and Korean Missionaries build and supply dispensaries, schools, churches and hospitals, they have added at the same time a new value to their own lives. The wonderful goals of medical missionaries who have devoted their lives to this work can now be more fully appreciated. Americans can be proud of them, and they can well be proud of the United States Army too which has already been doing vital necessary "postwar peacetime" work in Korea for well over five years.

NOTICE TO MEMBERS

The Resolutions Committee for the 63d Annual Convention of the Association of Military Surgeons to be held at the Hotel Statler, Washington, D.C., November 12-14 is composed of the following:

Major General James P. Cooney, MC, USA (Chairman)
Rear Admiral Bruce E. Bradley, MC, USN
Brig. General Olin F. McIlnay, USAF (MC)

Members desiring to submit resolutions for consideration by this committee should address them to the Headquarters of the Association, 1726 Eye St., N.W., Washington 6, D.C.

What the United States of America Did for the Railway Transportation of the Sick

By
OSCAR PAUL DOST
Neumünster, Western Germany.
Translation by CLAUDIUS F. MAYER, M.D.

IN THE Anglosaxon world—World War I has been called "The Great War." After the experiences of that great ruthless war, with the bodily injuries that it caused, the world learned how important the railway transportation of the sick is in time of war.

Without railways it is impossible to carry the large number of wounded persons to the various hospitals. The automobile and the air transport alone are not in the position to do the job although they are considered proper means for the task.

Transportation of the wounded is a human duty and its practice is a moral demand on humanity. Notwithstanding this recognized human duty, political strategists feel justified in their opinion that, after recovery of the wounded person, he may again become an effective fighter.

Between 1930-1940, in wide circles of the transportation administrators, the view was held that the railroad had become strategically obsolete and that, especially in the field of transportation of the sick, it could be equally or more advantageously replaced by automobiles. These circles were taught differently in a rather drastic way, however, since their refusal in preparing a sufficient number of all types of hospital trains resulted in the loss of many lives.

We German railway specialists had repeatedly attempted to persuade our national socialistic government on the urgent need to prepare and to set up a sufficient number of hospital trains. Shortly before World War II and in the first years of that war I published five essays* on this subject, but further articles were not permitted to appear. Yet, those published may have had some effect, and may have helped some people in the world.

The spirit of refusal can be found not only in Hitler's Germany but also in other countries that rely completely on the automobile. This spirit of refusal to consider railway transportation may also appear in the future. It is, therefore, necessary to convince all the transportation experts that only the railway hospital train is able to transport over greater distances the masses of wounded and sick, some of whom may require special nursing care, and give the assurance of keeping these individuals under constant supervision. In time of disaster of any type this is true as well as in time of war. Personnel can move from car to car, and during travel patients can be moved to a treatment room. All this cannot be provided in the automobile column, not to mention the length of such a column, the difficulty of its supervision, and its requirements in personnel.

Considering 200 sick and injured the data in the table on page 251 is given for their transportation.

These figures are revealing. Those who can be convinced of the suitability of railway transportation will find ways to use it in its simplest form and avoid long and costly preparations.

The United States can be cited as an example of working out an efficient method for railway transportation of the sick and wounded. That country produced something unique. Where other countries experimented and groped in the dark the United States came out with an improvised method which soon was perfected.

In the Secession War of 1861-1865 the

* One of these articles, under the title "Lazarettzüge in verschiedenen Staaten," was published in 1939 in the 4th volume of the authoritative Deutscher Militarärzt, p. 521-5 (Translator's note).

	Railroad (U.S.A.)	Automobile
Patients	200	200
Number of cars	28	70
Length	560 m (approx. 1,848 ft.)	1,500 m (approx. 4,950 ft.)
Personnel needed	56	120
For simpler equipment (Germany) the following figures are given:		
Patients	386	386
Number of cars	26 (express)	120
Length	550 m (approx. 1,815 ft.)	3,000 m (approx. 9,900 ft.)
Personnel needed	45	180

United States created the hospital train, until then unknown to the world. For its final completion this train still needed a surgical car for operations. Such a car was introduced to the world by the Russians in 1904 during the Russo-Japanese War. Today we do not exactly consider this as a gift of the Danaids; the surgical car may not be necessary.

In the Secession War the transportation of the sick had become just as exemplary and creative as the exploitation of the railways in that war in general. In that war we find the basis and origin not only of our entire field railway system but also of the railway troops. It was in that war, for the first time in history, that one could speak of a "Railroad War." All the technical aids of that era were put into the service of that grave war. The young country was being put to a test of a decisive nature.

The technical achievements of America of that era donated to the world an appliance which, if the world wanted to accept it, could simply be borrowed. People were, thereafter, enabled to move the wounded and sick in mass transports, in a humane manner and without added harm. This applied to both peace and war. Many countries did not accept the pattern that was presented to them because their experts believed that the same goal could be reached by simpler and cheaper methods. After much costly experimentation those countries finally came to the very same system which had been developed in the States. This system was nothing other than the creation of hospital cars, with nursing equipment provided, out of passenger cars and boxcars used in the public transportation system—the egg of Columbus which for us now seems to be quite natural but at that time had been a unique achievement.

However, the Secession War had also shown something else of a much deeper significance. It is a well-known rule of military history that civil wars are usually fought with particular horror and inhumanity. Here there was Englishmen against Englishmen, Germans against Germans, brother against brother; they had battled with fanaticism and not always in a fair manner. BUT—and this is absolutely unique in the entire military history of the world—there occasionally shone a beam of light of human dignity and love of neighbor; ways and means were found to make hospital trains available for both the combat lines. The hospital train, under the observance of certain recognizable marks and rules, e.g., a red and white lamp, was considered neutral; it moved between the combat lines to pick up the wounded. Where else had anything like this occurred? Where else had so much humanity been exhibited in war? While many things seem to have been forgotten the transportation of the sick and wounded has been recognized as due to the Americans.

Another example from America which was rarely imitated was the recruitment of the deluxe trains for the transportation of the sick and wounded. This becomes a morale factor rather than a technical problem. During a war sleeping cars are turned over for the transportation of patients even though they were not originally designed for that purpose. By doing this, class distinction can be avoided. It is interesting to note that the Russians likewise had put parlor cars

and sleeping cars of the Court into service for patients during 1904 and 1914.

During both World Wars hospital trains were used on the Continent. On the Western Front during World War I hospital trains were supplied by the English. In World War II the United States equipped trains for Europe the same as England did, that is, by the overhauling of all seats and vertical separating walls a huge space was created inside the express train cars, and into this space 3-tiers were provided for stretchers. The highest principle remained here—to offer all possible care to everyone, to be careful in the handling of the sick and injured victims of the nations, and as real proteges of the nations to honor those who had risked their lives for their countries.

Many countries have learned from the Secession War of the States, thereby creating something good for themselves. They have developed further what was originally developed for the sick and wounded. Countries should remember that they need to recall that war to their memories when considering the creation of first-class hospital trains. What had come into the world was indeed an achievement for all people to admire.

Herpes Zoster; Etiology, Diagnosis, and Effective Management of a Case

By

LT. COL. I. JACQUES YETWIN, MC, USAR*

HERPES ZOSTER (Shingles, St. Anthony's Fire, Zona) is an acute, painful, incapacitating disease of adults characterized by inflammation of posterior root or extramedullary cranial nerve ganglia. This is accompanied by crops of vesicles appearing in areas supplied by the affected sensory nerves. The disease is widespread and occurs in military and civilian personnel.

ETIOLOGY

The virus of Herpes Zoster resembles that of varicella and lesions of both conditions are similar in appearance. Although distinct entities, both agents possess certain antigenic properties in common. The agent has been visualized under the electron microscope and the elementary bodies have been observed in routine pathological preparations.

TRANSMISSION

Incubation periods of the infection vary from 7 to 14 days. It may appear secondary to an insult to a susceptible dorsal root as occurs in arsenic poisoning, with a tumor, with leukemia, or in tuberculosis. In most instances, onset is sudden. The disease is sporadic and is rarely seen below the age of twenty. Incidence is higher in the male and contact infection is rare. Herpes Zoster appears more often during the winter and spring months.

PATHOGENESIS

A characteristic inflammatory reaction is noted in posterior nerve roots and ganglia. This consists of an infiltration of small round cells and erythrocytes, a necrosis of nerve cells and fibers, and ganglion sheath inflammation. Corresponding fibers of the spinal cord may undergo degeneration. In severe cases, involved ganglia are scarred and one observes areas devoid of cells and nerve fibers, as well as thickening of the ganglion sheath. In mild cases, little or no permanent damage may result. Those dorsal ganglia which receive fibers from viscera through white rami of the sympathetic branches are most often involved.

DIAGNOSIS

A differential diagnosis from chickenpox must be made. The viral agents, vesicular eruptions, and intranuclear inclusion bodies are similar in both. Differences from chickenpox are age incidence, epidemiology, the general clinical picture, and changes in the central nervous system.

The clinical onset is one of a low grade fever with malaise. Considerable unilateral pain and tenderness is evoked along involved dorsal roots or their corresponding skin areas. The primary skin lesions are papules which become vesicles in 3-4 days. If secondary infection supervenes, the vesicles become pustules. As the disease progresses, crusts form and the pain and tenderness are relieved. Where extensive involvement occurs, the motor roots are affected to cause a temporary or sometimes permanent paralysis. The ophthalmic division of the trigeminal nerve, which arises in the semilunar ganglion, is most frequently involved. In such instances, a severe burning pain is noted in the eye and forehead of the involved side, persisting for weeks. Ocular complications and their sequelae appear in about half the cases.

Complications encountered are (1) *Keratitis* involving the substantia propria at

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various depths and associated with edema of the surface epithelium plus wrinkling of Descemet's membrane; (2) separate *opacities* which become confluent and do not clear completely; (3) *iridocyclitis,* usually accompanying the keratitis; (4) *scleritis;* (5) *atrophy of the iris* following a severe iritis; (6) *phthisis bulbi* when uveal structures atrophy; (7) changes in *intraocular tension;* (8) *ocular palsies* affecting the third, fourth, and sixth cranial nerves to cause defective ocular movements; and, (9) *optic neuritis* followed by atrophy to the extent of abolition of light perception.

Vesicles appearing on the pharynx, tongue, uvula, and larynx are very painful. In half of the cephalic cases, the end result is paralysis, particularly of the laryngeal and facial areas. A persistent neuralgia follows convalescence in the older age groups.

Treatment

During acute attacks one may apply soothing lotions, such as *Calamine. Deep X-ray Therapy* has given relief to some patients.

Oral administration of a variety of medications has its advocates. *Banthine bromide* (methantheline bromide) is prescribed in 50-100 mgm. tablets every 4 to 6 hours until lesions begin to dry and discomfort subsides. *Etamon* (tetraethylammonium chloride) 50 mgm. twice daily gives relief from pain following block of the autonomic ganglia; results are rapid and dramatic. Intramusclar administration of *Pituitrin* sometimes gives temporary relief or may even effect a cure. *Protamide* (a sterile aqueous colloidal suspension of proteolytic enzymes) is administered intramuscularly in 1.3 cc. amounts daily for four days; there are no contraindications and no incompatibilities; relief from pain is observed in 4 to 48 hours and the lesions heal in less than 10 days. Injection of nerve roots with *Alcohol* is good adjunctive therapy when accompanied by oral doses of *Methadone hydrochloride* 2.5 mgm. or *Codeine sulfate* half-grain, for relief of the pain and discomfort.

In the late neuralgias, *Sympathectomy* or section of the sensory roots is a last resort. *DHE 45* (dihydroergotamine methanesulfonate) administered in 1.0-1.3 cc. doses for 1 to 4 treatments relieves the pain in 75% of cases; the clinical course of the eruptions is not affected. *DHE 45* may be given intravenously or intramuscularly, the latter route being preferred; some of the untoward effects which have been observed are a temporary hypotension, moderate headache, nausea or vomiting, and temporary bradycardia.

Thiamine hydrochloride, which is effective in many conditions involving degenerative nerve changes can be used here in 200 mgm. amounts intramuscularly daily for five days with good results. Injection of the vitamin gives immediate relief from pain, accompanying fever subsides, patients are able to sleep without resulting to hypnotics, and there are no toxic manifestations. The use of *Vitamin B-12* needs further evaluation at this point. *Sodium iodide* may be administered intravenously in 2 gm. doses for 2 or 3 injections on alternate days with some success reported.

Among the antibiotics, *Chloromycetin* in 250 mgm. doses orally every 4 hours for 24 hours causes a marked diminution in pain and lesions regress rapidly during the following 48 hours; there is no residual neuralgia as may occur with other medications. *Aureomycin* and *Terramycin* need further studies.

Discussion

With the variety of medications and regimens available in the treatment of Herpes Zoster, the practitioner may find it difficult to decide upon a course of action. Sauer[1] has treated a large group of patients with *Cortisone* and *Acthar Gel* (Corticotropin) when pain has persisted for 30 days or longer and when the intensity of pain was moderate or severe. *Acthar Gel* was given intramuscularly in 40-80 Unit strengths on the first day, then 40 Units daily or every other day for 3 to 4 days. The patients were then maintained with *Cortisone* 25 mgm. orally every 6-8 hours for four to 26 days.

Smith[2] used *Protamide* on some 260 patients with good results noting particularly that local and systemic reactions were avoided. The Lehrers[3] reported upon 422 patients with excellent results noting that *Protamide* gave complete relief from pain, healing of lesions, and no resultant neuralgias.

Effective Management of a Case

The patient (AN) was a well nourished white male age 51, a foundry worker, height 69 inches and weight 202 pounds. Physical examination revealed no particular abnormalities except those relating to the herpes infection, and routine laboratory findings were well within normal limits. Previous history had no bearing on the present condition. The right-sided vesicular lesions of Herpes Zoster were well defined along all branches of the ophthalmic division and the zygomaticofacial branch of the trigeminal nerve. Pain accompanying the lesions was excruciating. On 12 December 1955, the patient received an initial intramuscular injection of *Acthar Gel* 40 Units and was instructed to apply *Neocortef* ointment (hydrocortisone-neomycin) in 0.5% strength twice daily to the vesicles. He was also instructed to take one tablet of *Salcort* (cortisone-salicylate-calcium ascorbate) every 3 hours for two days. Several tablets of *Codeine sulfate,* half-grain; and capsules of *Tuinal* (seconal-amytal) 1½ grains, were left with him in the event he required relief from pain or sleep. The patient used three tablets of the *Codeine* on 13 December and one capsule of the *Tuinal* on 14 December. On 16 December he received 1.3 cc. *Protamide* intramuscularly; this was followed by a similar dose on 17 and 18 December. No further pain was reported after 14 December; vesicles began to disappear on 16 December and full recovery was apparent on 18 December. The patient was seen on several occasions thereafter; no sequelae have been noted.

Summary

A very effective and comparatively inexpensive treatment for Herpes Zoster has been presented above. Local use of a cortisone-antibiotic ointment, accompanied by small amounts of an analgesic and sedative; an inoculation of a corticotropin; and three inoculations of a suspension of proteolytic enzymes have yielded excellent results in the management of a typical case.

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[1] Sauer, G. C.: Treatment of Herpes Zoster with Cortisone and Corticotropin. A.M.A. Arch. Dermat., *71:*488-91 (1955).

[2] Smith, R. T.: Treatment of Neuritis with Protamide. N.Y. Med., *8:* No. 16, 16-19 (1952).

[3] Lehrer, H. W., Lehrer, H. G., and Lehrer, D. R.: Clinical Evaluations of Protamide in Sensory Nerve Root Inflammations and Allied Conditions. Northwest Med., November, pp. 1249-52 (1955).

Credit Points Can Be Earned by Reserve Officers of the Medical Services Attending Our Convention.

Photo by Ackad

PRESENTATION CEREMONY AT WHICH ORIGINAL X-RAY TUBE USED BY PROFESSOR ROENTGEN WAS PRESENTED TO THE SMITHSONIAN INSTITUTION

(L. to R.): Maj. Gen. Dan Ogle (*Surg. Gen'l, USAF*); Dr. Eduard Hess (*Scientific Attache, German Embassy*); Dr. Leroy E. Burney (*Surg. Gen'l, USPHS*); John Graf (*Ass't. Sec'y, Smithsonian Institution*); Rear Adm. Bartholomew Hogan (*Surg. Gen'l, Navy*); Robert L. Lefevre (*General Electric Co.*); Maj. Gen. James Cooney (*Deputy Surg. Gen'l, Army*); E. E. Ramsaur (*Office of German Affairs, State Dep't*).

Roentgen's Tube—A Gift to Smithsonian Institution

WHAT did the x-ray show? How often have we heard that question? It is almost routine now in medical groups when a patient's case comes up for discussion.

Not until November 8, 1895 could such a question be asked. Then Wilhelm Konrad Roentgen (1845-1923), a professor of physics at the University of Wurzburg, Germany, discovered these rays that could penetrate a layer of black pasteboard and cause a barium-platinum cyanide screen to fluoresce.

The original experiment was followed by many others in Roentgen's laboratory. Two of the tubes he used in his work remain in Germany but the third is now at the Smithsonian Institution in Washington. The acquisition of this third tube was made possible by the General Electric Company's X-ray Department of Milwaukee, Wisconsin.

This Roentgen tube arrived at the National Airport at Washington, D.C., on August 24 and in a ceremony was turned over to the Smithsonian Institution.

Dr. Eduard Hess, Scientific Attache at the German Embassy, said, "I think we all agree that the placement of this tube in the historic collection of the Smithsonian Institution will be a constant reminder to the millions who view it of the work of a great scientist."

Mr. Robert Lefevre of the General Electric Company stated, "Displaying this historic relic will serve to remind this and future generations not only of Professor Roentgen's great discovery, but it will serve as an inspiration to others to carry on the scientific and medical investigations leading to fuller and more healthful lives for all peoples."

Mr. John Graf, Assistant secretary of the Smithsonian Institution, remarked, "Millions of our visitors will learn to appreciate the importance of Professor Roentgen's scientific achievements, and especially younger students of science will be inspired by Roentgen's great discovery, of which this historic apparatus is a symbol."

Photo by Ackad

Original X-ray Tube used by Professor Roentgen.

The tube will be preserved and exhibited at the Smithsonian in the National Museum's Gallery of Medical History.

"One foolish blunder may put you under."

PFC. WM. R. BARGER, Prize Winner, Safety Slogan Contest, Brooke Army Medical Center.

EDITORIALS

Our Convention

FINAL preparations have been made for our convention at the Hotel Statler, here in Washington, November 12, 13, and 14. In this issue you will have before you the program. Study it carefully and if you have not decided to attend may we suggest that you change your mind. Be on hand for this event. You will not regret your decision to attend.

All American

IT IS a privilege to be an American. On some this honor has been thrust; on others citizenship in our great country, the United States of America, has come through individual effort with or without encountering some difficulties.

Is this privilege of citizenship in our United States really appreciated? We probably give the question and the answer little thought as we go about our daily work and pleasures so long as the benefits of such citizenship are heaped upon us.

Here in America we have plenty of food, plenty of clothing, good shelter, excellent medical care, and increasing security for that period in life when the infirmities of age come upon us. Americans have made this for themselves through their freedom of thought and action. Let us always keep it that way.

With plenty there is a tendency to become complacent and neglect some of the duties of citizenship. Free thought and free action could disappear through such complacency. We would regret any such loss. To guard against such loss let us do our duties as good citizens.

Next month we have a privilege and a duty to perform. That duty should not be a perfunctory action but one that should be accomplished after some very serious thought. We should not let ourselves be kicked around as a football and in the emotion of the contest make a decision based upon our own incomplete analysis of the situation.

It is the duty of every American who has the right of franchise to go to the polls next month and exercise that right. Let's be All American.

Around the World

(Ser. II, No. 2)

By
CLAUDIUS F. MAYER, M.D.

BUKHARA, Tashkent, Samarkand, Tamerlane's old capital, and the rest of Soviet Uzbekistan's cities and *Kishlaks* have been visited throughout the centuries by many travellers of many purposes. Recently, an admirer of this charming region of Central Asia collected the experiences of all modern tourists, and published them as a gift to those who might enjoy a comprehensive (slightly anti-American) picture of life in the Uzbek Republic (Cf. V. Vitkovich: A Tour of Soviet Uzbekistan, Moskva).

Uzbekistan is a land of oases and deserts, situated between the Aral Sea and the Altai Mountains, from 38° to 46° Lat. North and from 58° to 73° Long. East. It is an area of the size of Western Europe, with a population of about 5,000,000. Although the republic lies in the same latitude as California, in January its average temperature is as low as in Southern Greenland. In winter in Tashkent the temperature may drop to 86° F below zero, while in the summer it may climb up to 104° F in the shade. Near the Afghan border is the city Termez, the *hottest point in Soviet Russia* where the temperature reaches 122° F in the shade.

Uzbekistan was proclaimed a republic in 1924, and received its constitution in 1927. Since the socialization of the land, life in Uzbekistan changed tremendously. The country became the chief *producer of Soviet cotton* (2½ million tons in 1953). It also supplies two thirds of the Soviet Union's karakul (center in Samarkand), half of the silk (center in Bukhara), more than half of the Union's rice (center: the Miyankaleh Valley). It also produces some oil and natural gas in the Ferghana province. For the betterment of its cotton crop, Uzbekistan had to be *thoroughly industrialized*. Its ancient towns, together with some brand-new ones such as Chirchik, are now the centers of industry as well as of the rejuvenated Moslem culture that can be traced back to the 15th century, to the times of Ulug Beg, grandson of Tamerlane.

Though from the minarets the muezzins are still calling the faithful to prayer, *science and medicine in the Uzbek Republic* are now entirely modern. There are many new hospitals, and there is about one hospital bed for every 186 people. Maternity hospitals were built, though it first required a lot of work to persuade women to come to the hospital without being afraid that the wicked *ajina* would cast a spell upon their babies. There are also several health centers such as Leninabad, Hamzaabad, also tuberculosis sanatoria, etc. The favorite resort is sunny Hamzaabad in a beautiful mountainous region.

The bazaar barbers, who would bleed people for any indisposition, and the bazaar bonesetters and quacks are now replaced by doctors who receive their patients at free district hospitals. It is said that Soviet medicine quickly won over the people of Central Asia. Indeed, it was often through doctors that the ideas of communism made their way into the remotest *kishlaks* (villages). In the beginning of Soviet regime, the newly acquired land was toured by teams of medical specialists. Now, medicine became part of the Uzbek daily life, and *Uzbek doctors* are in sufficient number to staff the urban and rural clinics. In the Kara-Kalpak region, south of the Aral Sea at the delta of the Amu River (the ancient Oxys), all doctors are of the "flying" doctor variety, visiting their remote patients by airplanes.

In Uzbekistan there are more than 5,000 schools, among them two universities, one at Tashkent, another at Samarkand. There is also an Uzbekistan Academy of Sciences

which directs all other *institutions of science* of the land. The Central Asian State University at Tashkent, founded in 1920 by Lenin, replaces the old Mohammedan colleges (*madrasah*), though there are also many other colleges in the capital city where thousands of young people graduate yearly as doctors, engineers, biologists, etc. It is said that only two percent of the Uzbek people are now illiterate. Both the Tashkent and the Samarkand universities have medical schools, and in Bukhara there is a school for medical technicians.

Among the many other scientific institutions we should mention a modern *antivenom institute at Tashkent*, and the unique Latitude Station in the town Kitab where astronomers study the shift of the poles of the Earth and the cyclic variations of the latitudes. An outstanding Uzbek chemist (Sadikov) succeeded in obtaining nicotinic acid from a plant of the sandy Kizil Kum and Kara Kum deserts. Another Uzbek scholar (Yunusov) discovered 35 alkaloids in the desert plants. Another medical scholar (Umidova) became renowned by her studies of the influence of hot climate upon the function of the heart.

Cholera and smallpox, the old scourges of Uzbekistan, are now exterminated. The rate of tuberculosis mortality has been halved, and a successful campaign is kept on against such *Central Asian diseases* as pappataci, leishmaniasis, brucellosis, dracunculosis, etc. The rate of malaria is also less than before. Malaria has been always a serious disease in Central Asia, and it used to be very violent in the rice-raising districts. A large-scale fight against the disease has been carried out by the Uzbekistan Malariological and Parasitological Institute at Samarkand. They raise Gambusia fish to feed on mosquito larvae; they spray swamps and flood lands with chemicals from airplanes. There are now about 100 *malarial stations* and 450 tropical centers in Uzbekistan. At the Miyankaleh rice fields Soviet sanitarians also recognized that malaria larvae can be killed by sunshine without injury to the growing rice. Thus, they persuaded the farmers to drain the fields, let them dry out, and reflood them.

Bukhara, the town where Avicenna, the "Prince of Doctors," was born in the 10th century (980-1037), is an ancient city, with many cemeteries, mosques, and architectural monuments. Water in Bukhara is at a premium, though people need it like air, and drink it often, especially in the form of tea. Until recently, the public water was stored in 85 stone reservoirs, and sold by water carriers. Now, there is a modern waterworks at Registan. In 1952, at the millennial birthday anniversary of Avicenna, the city built a large library which became the depository of oriental manuscripts, but the communists took care that on the side of Avicenna's *Al-Qanun* the reader should also find the maxims of the communist philosophers.

Around Bukhara, a fierce battle has been raging for many centuries between Man and the *Kizil Kum desert*. The sands are in constant motion near the towns, and several of them had to be deserted. But the Bukharans could stop the desert. The Uzbek Academy of Sciences has also established a Sand Station in the heart of the desert where protective devices and shelters are constantly tried out. Moreover, the modern expansion of *irrigation system* by means of dams, great canals, and ditches (*ariks*) changed large areas of the formerly arid steppe, the Hungry Steppe, into fertile land. Soviet engineers have rebuilt the irrigation network. They also dream that one day they can revert the great Siberian rivers, the Irtish and the Ob, from their course to the Arctic Sea, backwards to the Aral and Caspian Seas, to make Central Asia the most fertile land of the world.

A modern Women's Hospital opened recently at *Kandahar, Afghanistan*. The services of the hospital also include outpatient departments for maternal and child welfare, a prenatal clinic, a department for skin diseases, and a service for the distribution of free milk.

Mycotic skin infections are still very common in the towns and villages of *Central Anatolia,* according to the dermatologists of the Ankara Medical Faculty. The most frequent forms of *fungal infections* are favus and trichophytia of the scalp, though favus seems to be on its way out. After World War II the number of palmar and plantar epidermophytosis increased at an alarming rate. It is believed that the modern rubber-sole shoes, with their lack of ventilation, are particularly favorable for the anchorage of the fungus in the skin of the foot and for the development of athlete's foot. Turkish baths are no less responsible in the spread of Epidermophyton. Other mycoses such as actinomycosis, deep b'astomycosis, and Madurellasis are exceedingly rare in Turkey.

Anglo-Saxon people are inclined to look upon *Spanish science and medicine* as second class at the best. Perhaps our closer alliance with Spain will revive the spirit of Ramón y Cajal, and will show that biomedical investigators in Madrid, Barcelona, and other towns of the Iberian Peninsula have just as keen eyes and as good an organized approach to the solution of life's problems as scholars elsewhere in the world. There are many first-rate Spanish medical and biological periodicals issued by numerous societies and scientific institutions, containing the important results of serious studies, observations and experiments, just as formidable and scientific looking as those published in wealthier countries traditionally devoted to technological research.

The title of a recent article in a Spanish medical journal for instance reads: Bioquanta. *Bioquantum*—à la Planck's quantum theory—is a new word for a new biological concept "made in Spain." It means the smallest constant quantity of a substance a cell produces and maintains for its life. According to the proferred hypothesis of the investigator (Y. Valladares) 1-epinephrine and 1-norepinephrine are carried by all cells of the body, and manufactured probably by the genes themselves. The calculated bioquanta are $2.09.10^{-11}$ micrograms for 1-norepinephrine. The list of substances being produced in definite bioquanta includes also other hormones, aminoacids, vitamins, many protids, nucleoprotids and enzymes.

Testing the *brain waves of 200 French recruits,* of the average age of 20 years, French military surgeons found that only a small percentage (12.5%) had classically normal electroencephalograms, while the great majority produced brain waves that were paranormal or subnormal (72.5%). Only a small percentage (15%) showed abnormal EEGs. Some of the latter group had suffered head injuries or manifested other abnormalities of the nervous system. This just proves the old observation that electroencephalography is but a method of exploration and diagnosis, and as such it should observe the laws of its sister methods. It cannot develop into an independent science, and must remain a part of the whole.

A French professor (Lépine) surveyed a group of poor children of all ages (from 1½ to 21 years) who are living in *the slums of Paris* and are in need of proper care and adequate nourishment. He wanted to learn how such children are protected against *poliomyelitis.* To his great surprise, 92.5% of the children proved to have "natural" immunity against infantile paralysis, though such immunity was complete in 40% of the children only. In the slums of cities the children of the lowest social castes acquire their antibodies rather early in life. About 71% of them have had their contact with the virus of poliomyelitis before their third year of life. It is evident that the worst hygienic environment provides the opportunity for the best exchange of virus, for latent infection and a spontaneous early immunization.

The danger of spreading *poliomyelitis* has been also recognized by the *Swiss Army.* There is however not much protection against the disease, especially when it takes epidemic proportions. Inoculation with an active virus would be dangerous. The inoculation of the polio antigen is harmless but ineffective. Passive immunization by means

of convalescent serum or by contacts is of doubtful value. The use of gamma-globulin is impracticable in troops. Thus, "prophylaxis by exclusion" is the only remaining measure. Contact of the troops is prevented with both the sick individuals and the infected region by means of a policy of "no leave" and quarantine. During the past seven years, there were but an average of 8-9 cases of polio and about 2 deaths.

Foot-and-mouth disease is very hard to eradicate in the world. After a series of studies, which started with the 1951 European outbreak of the disease and were recently finished, French medical authorities came to the conclusion that only the system of "stamping out" the focus of infection is effective. Killing the infected animals and imposing rigorous quarantine is not enough, however, without international cooperation, and the conclusion of an international convention against the disease is urged, since the present procedures of vaccination alone are insufficient to stop the spread of the epizootic. No doubt a polyvalent immunity would be desirable. Yet, there are other non-animal viroses, human epidemics (influenza, poliomyelitis) where more knowledge about polyvalent long-lasting immunity is urgently needed.

"Stamping out" is now practiced in Great Britain, Norway, Sweden, Switzerland, and Canada. At the beginning of 1952; Sweden did not hesitate to kill in a few weeks 30,000 sick animals at 813 primary foci of the epizootic. This stopped the spread of the disease. On the other hand, six million vaccinations were unable in 1952 to prevent the spread of the disease among French cattle.

Two important symposia were held in Frankfurt, Germany, on the effectiveness of *oral hypoglycemic sulfonamide compounds* in the treatment of diabetes mellitus. The proceedings have been published in two recent issues of the *German Medical Weekly*, and their English translation has been just compiled into an impressive volume and issued by one of the American pharmaceutical companies. These special sulfonamide compounds, discovered in 1942 in France, have been extensively studied at French, German and Swiss clinics. Their beneficial action supposes the presence of relatively intact islet tissue in the pancreas which the tablets will then stimulate to more intensive production of insulin. Though the oral medication is chiefly effective in the diabetes of elderly people, any diabetic patient should be offered the new therapy; for there have been many cases of exceptional benefit reported. (N.B. The drug is known as *"orinase"* in this country.)

In a recent German book it was deplored that the *chlorophyll industry* had been permitted to expand vastly without first ascertaining the value of chlorophyll in medicine and cosmetics. A doctor of the Food and Drug Laboratories of the Canadian Department of National Health and Welfare also confirmed that chlorophyll as a *deodorant is valueless*, and that other admixtures may be responsible for the apparent deodorizing action of the various commercial preparations. The doctor also cautioned that prolonged use of chlorophyll may cause various untoward effects, especially diarrhea. (N.B. Such determinations are very much limited by the recognized bluntness of human olfactory sensations. In spite of the available osmoscopes and osmometers, the decision of the judges is ultimately based upon direct sniffing.)

Forty-seven successive postmortem examinations were collected from a London mortuary dealing with coroner's cases (suicide, accident, sudden death from disease) in women of the reproductive range. It was found that only two deaths had taken place in the follicular phase of the menstrual cycle. Thus, the luteal phase, the 14 days preceding menstrual bleeding, is the *hazardous period of the estrus cycle*. It is therefore advisable for women to take more care and rest longer before the menses, and for physicians to avoid operative interventions on women during this period.

The *Armed Forces of Great Britain* have a little more than 3000 *medical officers*.

Since 1948, when the National Health Service was introduced in that country, the forces had to compete with the more favorable terms of the new health service. Recent incentives (higher pay and pensions, etc.) hardly attract more young doctors to the military life since the incentives are considered too little and too late. There are also such deterrent factors as lack of professional opportunities, frequency and uncertainty of posting, and difficulties in getting accommodations for married couples and in educating children. It is also a drawback that retired military medical officers now have great difficulty in finding an opening in general practice in England whereas before 1948 they could always purchase a practice or a share in one. It is interesting that the report of the Waverley Committee (Forces Medical and Dental Service Committee) stated the undesirability of any amalgamation of the three military medical branches.

The international losses of medicine of this year include *Robert Bing* (1878-1956), eminent Swiss neurologist at Basel, whose various neurological works reached many editions and are known all over the world (e.g., Lehrbuch der Neurologie, 9 ed., 1952). A few months ago, Canada lost her centenarian, Dr. *William McClure* (1856-1956), who in 1888 went to China as a medical missionary and stayed there for 50 years (until 1938) as a physician. He had been also teacher of internal medicine in the Chee Loo University, in Shantung Province, where he lectured in perfect Chinese. Another missionary doctor, a former slave once sold in Timbuktu by the Tuaregs, died at an age of over 90. Since 1888, Dr. *Adrien Atiman* served as medical officer at Karema, Tanganyika. When a young man, he was ransomed by the White Fathers from the slave-traders in Southern Algeria, and he became the protegé of Cardinal Lavigerie who provided for the boy's medical training in Malta.

One of the strangest cases of *allergic rash* was reported recently from Bath, England. A woman of 47 years has been suffering from a recurring rash about her face and neck. The woman was told to keep a log-book of the rash. Now, she discovered that the rash appeared every time she played *bridge with plastic cards*, the onset being at the close of two hours' play.

Apparently not everything is smooth sailing for the British doctors who are working for the National Health Service. They are abused by their patients often enough to bring up the idea that a *Code of Conduct* should be established *for the patients*. At present, when a doctor suffers from a patient he cannot do anything but forgive him. There is no protection of the doctor against abuses. He can be called out maliciously at night, but there is no punishment for that. On one occasion a doctor under provocation told the patient to go to hell; he was fined £10. "What would have been the fine"—asked a bitter British doctor recently—"had the patient told the doctor to go to hell?" None at all. Justice requires that what is sauce for the goose should be sauce for the gander.

Patients suffering from dangerous or incurable diseases are worried by reading of these *diseases in the popular press*. One English colleague wants to remedy the situation by muzzling the press concerning dangerous diseases. Another colleague remarks that this would require an Act of Parliament and another "Committee" to compile the list of dangerous diseases. Would it not be better, asks our colleague, if the practitioners, in labelling a disease for the sufferer, would avoid forever such terms as subarachnoid hemorrhage, or disseminated sclerosis so that they would be neither seen nor heard by the patient?

In their attempt at westernization or *Americanization the Japanese* are copying many things they discovered on this side of the Pacific. One sign of the new trend is the increase in articles on *psychological topics* in the medical journals. In an issue of the Japanese *Safety Forces Medical Journal*, a medical psychologist of Nihon University reported his studies on "Emotional

Tolerance of the Nurse Corps Students at the GSDF Medical School." He came to the conclusion that, though the Army nurse students might be frustrated, their reaction of aggression was "projected to the outer world," which is a good thing to know. The study was based upon the Rosenzweig Picture Frustration Tests of American origin, some of which pictures are reprinted among the many Japanese characters of the text, bearing their original English inscriptions, among them a particularly painful scene for the flower-loving Japanese girls, the one with the inscription: "Holy Smokes! you broke my mother's favorit (*sic!*) flower vase!" . . . *Multa paucis!*

"Don't retire from work or you will shrivel up into a nuisance to all mankind."—HERBERT HOOVER, *on his 82nd birthday.*

"One of the marks of an educated man is a nice balance between self-confidence and humility." MAJOR HAZEN C. CARPENTER, USAF, Far East Air Forces (Chief of Education Service Div.).

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It is a privilege to list the firms who have joined The Association of Military Surgeons as Sustaining Members. We gratefully acknowledge their support.

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ASSOCIATION NOTES

Timely items of general interest are accepted for these columns. Deadline is 3rd of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON. FRANK B. BERRY, M.D.

Deputy Ass't Sec'y.—HON. EDW. H. CUSHING, M.D.

DEPENDENT MEDICAL CARE

Probably only a comparatively few realize the immensity of the dependent medical care program which has been authorized for the Armed Forces by Public Law 569, 84th Congress.

Much work is being done in the military departments to implement this law and the plans must be ready by December since the program must go into effect December 7, 1956.

For the first time there will be a legal basis for taking care of dependents. Heretofore, the service has been given "on the cuff" though everyone must admit that the service was given graciously and completely.

We shall await the new regulations which are to come out of the Department of Defense.

INFLUENZA IMMUNIZATION

Members of the Armed Forces will be given influenza vaccination this fall. Those coming into the service up to March 1, 1957 will also be immunized.

Dependents and civilians in the overseas areas will be given the opportunity to participate in the program also.

SELECTIVE SERVICE CALL

The Department of Defense has asked the Selective Service to provide the Army with 17,000 men during October. This is an increase of 3,000 over the September number requested.

Assistant Secretary of Defense Carter L. Burgess said, "The October call is indicative of the continuing need for the draft to maintain the approved strengths of our Armed Forces.

"It points up again the advisability for each young American to choose, at an early date, which of the several available methods of discharging his own military obligation is best suited to his needs."

ARMED FORCES STRENGTH

The total numerical strength of the Armed Forces on June 30 was 2,806,516. This represents a decrease of 6,006 from the May 31 figure.

The strength was distributed as follows: Army 1,025,772; Navy 669,296; Air Force 910,700; Marine Corps 200,748.

AFIP ASSIGNMENT

Col. Warren C. Eveland, MSC, U. S. Army, has been assigned as chief of the Bacteriology and Immunology Section of the Armed Forces Institute of Pathology.

Prior to this assignment he was on duty with the 406th Medical General Laboratory in Tokyo.

Colonel Eveland holds a B.S. degree from the University of California, a master of science and public health degree from the University of Michigan, and a Ph.D. degree from the University of Maryland.

JOINS U OF TEXAS

Dr. Melvin A. Casberg who was the First Assistant Secretary of Defense (Health and Medical) in 1953 has joined the University of Texas in Austin as Vice President for Medical Affairs.

Army

Surgeon General—MAJ. GEN. SILAS B. HAYS

Deputy Surg. Gen.—MAJ. GEN. JAMES P. COONEY

SGO ASSIGNMENTS

Lt. Col. Gordon A. Bohn, MSC, has been appointed Chief, Field Operations Branch, Supply Division. Col. Bohn is a graduate of the Command and General Staff College and the Army War College.

Lt. Col. Layne E. Carson, MC, has been appointed Chief, Inductions and Appointments Branch, in the Physical Standards Office of the Professional Division, Surgeons General's Office.

Lt. Col. Crandall I. Koons, DC, has been appointed as liaison officer for the Army Medical Service dental reserves on the staff of Col. James H. Kidder, Special Assistant to the Surgeon General of the Army for Reserve Forces.

Lt. Col. Ernest K. Montague, MSC, has been appointed Chief of the Clinical Psychology Branch, Office of the Chief Psychiatry and Neurology Consultant, Surgeon General's Office.

AN IMPORTANT STEP FORWARD

Realizing the importance of first aid and also that there will be insufficient medical personnel on hand in the event of mass casualties to render that aid, the Army has launched a do-it-yourself program in first aid for the soldier.

The Education and Training Division of the Surgeon General's Office is handling the details of the program which will train instructors for this very important work.

NURSE CONSULTANT

Miss Mildred Newton of Columbus, Ohio, and director of the School of Nursing, Ohio State University has been named civilian consultant on nurse education to the Surgeon General. She will work directly with Major Marjorie Lindau, ANC, who heads the section on nurse education in the Education and Training Division, Office of the Surgeon General.

EXECUTIVE OFFICER WRAH

Col. John H. Voegtly, MC, has assumed duties as Executive Officer, Walter Reed Army Hospital.

Colonel Voegtly entered the Army in 1938 following an internship at Walter Reed Hospital. During World War II he was Planning Officer in the Office of the Chief Surgeon, European Theater of Operations. He is a graduate of the Army War College (1955).

ASSIGNMENT WRAIR

Col. Clark B. Meador, MC, has assumed his new duties as Chief of the Physical Standards Research Unit at the Walter Reed Army Institute of Research.

OUTPATIENT SERVICE CHIEF

Lt. Col. Raymond C. Clark, DC, who recently served as Post Dental Surgeon at Camp Drake, Japan, has been named as the new chief of the Out-Patient Dental Clinic, Walter Reed Army Hospital.

ADVANCED DENTISTRY CLASS

The 16th Dentistry Advanced Class at the Walter Reed Army Medical Center has the following students: Lt. Colonels Eugene M. Dasent, USA; Warren R. Hester, USAF; Alexander H. Lippman, USAF; Louis P. Richardson, USAF; Albert H. Schlussel, USAF; Majors Jos. J. Barone, USA; Andrew Christopher, USA; George E. Erdmann, USA; Fred F. Foxx, USA; Ernest E. House, USA; John J. Mayer, USA; Corliss J. Roll, USA; Leon Rudy, USA; Robert H. West, USA, and Henry L. Zak, USA.

Foreign students include: Maj. Garth C. Evans, Canada; Capt. Yasar Yatmaz, Turkey; Lt. Farmarz Bassary, Iran.

Brig. Gen. Arthur L. Irons is Director of Dental Activities at the center, and Col. Thomas A. McFall is Director of the Di-

vision of Dentistry, Walter Reed Army Institute of Research.

BROOKE HOSPITAL

Major Maxwell A. Cook has become Chief of the Medical Social Work Service at Brooke Army Hospital. He was formerly a member of the staff of the Post Mental Hygiene Consultation Service, Fort Jackson, S.C.

CHIEF OF SURGERY, TRIPLER AH

Colonel Warner F. Bowers, MC, who has been Chief of the Department of Surgery at Brooke Army Hospital for the past four years, has been assigned to a like position at Tripler Army Hospital, Hawaii.

Colonel Bowers was the recipient of the 1955 Sir Henry Wellcome Medal which was awarded by this Association for competitive essays, his essay being titled "Surgical Treatment in Abdominal Trauma: A Comparison of Results in War and Peace."

COMMANDING MADIGAN GH

Brig. Gen. Jack W. Schwartz, MC, who has been deputy commander of the Walter Reed Army Hospital, has become the commanding general of Madigan Army Hospital, Tacoma, Wash.

DEPUTY AT MADIGAN GH

Colonel Joseph R. Vivas, MC, who has been executive officer at Walter Reed Army Hospital for the past two years has been assigned to Madigan Army Hospital, Tacoma, Wash., as deputy commander.

VALLEY FORGE ASSIGNMENTS

The following assignments have been made at Valley Forge Army Hospital by Brig. Gen. Sam Seeley, Commanding General: Lt. Col. Stephen J. Berte, MC, Chief of the Tuberculosis Service; Lt. Col. Sidney Miller, MC, Chief of the Urology Service; Lt. Col. Thomas Robbins, MC, Assistant Chief of the Department of Medicine; Lt. Col. David Thomas, MC, Acting Chief of Surgery. Col. George Beatty, MC, en route from Hawaii where he has been Chief of the Surgical Department at Tripler Army Hospital, will become Chief of the Surgical Department.

DERMATOLOGISTS ASSIGNED

Col. Franklin H. Grauer, MC, formerly chief of dermatology at Walter Reed Army Hospital, is now chief of dermatology at Tripler Army Hospital, Hawaii.

Col. Raymond M. Williams, MC, who was chief of dermatology at Tripler Army Hospital, has been assigned to Letterman Army Hospital, San Francisco, Calif.

ASSIGNMENT FIRST ARMY HQ

Lt. Col. Alfred L. Taro, MSC, formerly of Walter Reed Army Medical Center, has been assigned as Chief of the Management and Fiscal Branch of the First Army Medical Section at Governors Island, N.Y.

RETIRED

Col. Eugene W. Billick, MC, who has been a member of the Army Physical Review Council, Surgeon General's Office, retired after 30 years' service. His address is: 2845 S. Buchanan St., Arlington, Va.

Col. Hugh Gilmore, Jr., who retired recently has taken a position with the Pennsylvania Bureau of Laboratories where he will be associated with Col. Cleon J. Gentzkow, USA, Ret., at Philadelphia (Popular and Corinthian Sts.).

TROPHIES

The Blanchfield Trophy was presented to Capt. Rachel Adams, physical therapist at Brooke Army Hospital as the 1956 All-Army singles tennis winner. Colonel Florence A. Blanchfield, former Chief of the Army Nurse Corps, for whom the trophy was named, made the presentation at the All-Army Women's Sports Tournament at Fort Bragg.

The Vogel Trophy was presented to M/Sgt Eleanor Jones, WAC, as winner in golf at the same tournament. Colonel Emma E. Vogel, who was first chief of the Army Medical Specialist Corps, for whom the trophy was named, made the presentation.

ADVANCEMENT ON RETIRED STATUS

Public Law 547, 84th Congress corrects an injustice in Public Law 126, 83d Congress for those Reserve officers who because they had completed more than 30 years of active service were ineligible to retire in officer status.

Those individuals who were retired between June 1948 and August 1953 and who completed thirty years service will be considered for advancement on the retired list. Application must be filed by May 31, 1956 and should be directed to The Adjutant General, Department of the Army, Washington 25, D.C. ATTN: AGPO-SR.

GENERAL SURGERY BOOK

General Surgery is the title of a new book prepared by the Historical Section of the Surgeon General's Office of the Army.

This new book of 30 chapters deals with the abdominal injuries of World War II. The book may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. at $4.25 per copy.

PETS

Care for pets by Army veterinarians has been discontinued according to a change in Army regulations. Only in those areas where civilian veterinary service is not available will the Army Veterinary Service be permitted to give care to pets.

RINDERPEST VACCINE

Patent No. 2,756,176 has been awarded to the United States for the development of rinderpest vaccine as a result of work done by U.S. Government scientists. The persons credited with the development of the vaccine are: Drs. Fred D. Maurer of the Armed Forces Institute of Pathology; Donald E. De Tray and Kenneth L. Kuttler of the U. S. Department of Agriculture, and Alfred M. Webb of the Department of the Army Chemical Corps.

Rinderpest is a disease of the cattle of Asia and Africa. It is not found in the United States but cattle are said to be very susceptible to the disease and the development of the disease in our country would seriously affect our meat supply. Therefore the new vaccine is hailed as a major step forward in veterinary medicine.

There has been a rinderpest vaccine but the development of the present vaccine is a great improvement on the old type. This is not the first time there has been an improvement of the vaccine by government personnel. The late Brig. General R. A. Kelser of the Army Veterinary Corps when a captain in the Philippines with the Medical Department Research Board, reported an improvement on the Boynton rinderpest vaccine. See THE MILITARY SURGEON, Vol. 61, 31-33, July 1927.

BLACK SHOES

Black shoes and socks are now the regulation for the Army Uniform. This was effective September 1.

ASSIGNMENT ARMY MEDICAL SCHOOL

Col. William A. Hamrick has been assigned as Director of the Department of Administration at the Army Medical Service School, Fort Sam Houston, Texas. He succeeds Col. Frederick H. Gibbs, who is now Director of the Interagency Institute for Federal Hospital Administrators with office at the Armed Forces Institute of Pathology.

Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

Deputy Surgeon General—REAR ADMIRAL BRUCE E. BRADLEY

NEW HOSPITAL

At dedication ceremonies on September 18 Rear Admiral Hogan, Surgeon General of the Navy, accepted a new naval hospital for the Medical Service at Guantanamo Bay, Cuba.

The new hospital of 100 beds is air conditioned throughout, the first naval hospital to

be so equipped. The cost is approximately $2,500,000. Captain Lyle A. Newton, MC, is the commanding officer of the hospital.

SELECTED FOR REAR ADMIRAL

Captain Clifford C. DeFord, DC, has been selected for the grade of Rear Admiral. He is a native of Bellwood, Nebraska, and received his Doctor of Dental Surgery from the University of Nebraska. He was commissioned in the Navy in 1929.

Captain Frank P. Gilmore, MC, Commanding Officer of the U. S. Naval Hospital, Chelsea, Mass., was selected for the grade of Rear Admiral.

ASSIGNMENTS

Rear Admiral R. M. Gillett, MC, has assumed the duties as Medical Officer of the 11th Naval District.

Capt. Alton C. Abernathy, MC, has assumed command of the U. S. Naval Hospital at Corona, Calif. He is a native of Oklahoma, received his medical degree from the University of Oklahoma Medical School in 1930.

Capt. Theodore R. Austin, MC, has been assigned as Chief of the Laboratory Service at the U. S. Naval Hospital, Great Lakes, Ill.

Capt. Allan S. Chrisman, MC, has assumed duties as Commanding Officer of the U. S. Naval Hospital, San Diego, Calif.

Capt. C. H. Coggins, MC, has assumed command of the U. S. Naval Hospital at Mare Island, Calif.

MEDICO-DENTAL SYMPOSIUM

The Seventh Annual Military Medico-Dental Symposium under the auspices of the Commandant, Fourth Naval District will be held at the U. S. Naval Hospital, Philadelphia, during the six-day period October 22-27.

The theme of the symposium is "The Medical Aspects of Hemispherical Defense." Credit points will be awarded for eligible Naval Reserve Medical Department officers attending the symposium.

ENSIGNS 1995

Selected senior medical students totalling 155 and from 57 medical schools throughout United States and Puerto Rico have entered on active duty as Ensigns, 1995 (Medical), U. S. Naval Reserve. They are participants in the Senior Medical Student Program.

These students will receive the full pay and allowance of their rank while so enrolled on active duty and upon completion of medical school and internship these officers will receive commissions in the medical corps of the regular navy.

DISEASE VECTOR CONTROL CENTER

The Navy acquired its first Disease Vector Control Center recently when the former Preventive Medicine Unit No. I, located at the Naval Air Station, Jacksonville, Florida, was redesignated for that purpose. It will be known as the U. S. Navy Disease Vector Control Center.

The mission of the Center will be "to serve those senior and subordinate commands, ashore and afloat, physically located within designated geographic areas, by providing training and indoctrination of personnel, technical assistance, and specialized services in the control of insects and other vectors affecting health and efficiency; provide the Bureau of Medicine and Surgery with information and recommendations relative to, and in support of, that Bureau's technical responsibilities concerning disease vector control matters; conduct related Bureau of Medicine and Surgery sponsored investigative and evaluation projects; priority of service is to be rendered to the Operating Forces of the Navy afloat and ashore of the Eastern Sea Frontier and the Caribbean Sea Frontier, with additional areas of responsibility as designated by the Bureau of Medicine and Surgery."

NEW RESPIRATORY VACCINE

A new respiratory vaccine made from adenoviruses, types 3, 4, and 7, was used in a controlled study on 4,000 recruits at the Great Lakes Naval Training Center during

the months January to April 1956. The vaccine which is given in one dose was developed by the National Institutes of Health and Infectious Diseases, Bethesda, Maryland.

The results of this controlled study showed that 50-70% of respiratory disease of the grippe variety which is characterized by fever was prevented. It was pointed out that the ordinary type of cold was not affected by this vaccine.

Air Force

Surgeon General—MAJ. GEN. DAN C. OGLE
Deputy Surg. Gen.—MAJ. GEN. W. H. POWELL, JR.

DIRECTOR MEDICINE STAFFING

Brig. General M. S. White, USAF (MC), has assumed his new duties as Director of Medical Staffing and Education in the Office of the Surgeon General of the Air Force.

General White comes to his new position from that of air surgeon of the Tactical Air Command, Langley Air Force Base. He received his medical degree from New York University in 1931 and entered the military service immediately. He became a flight surgeon in 1936.

SIX-MONTH TRAINEES

Under the authority granted by the Reserve Forces Act of 1955, the Air Force plans to recruit into its Air Reserve Program approximately 2500 men between October 1, 1956 and July 1, 1957.

The men recruited will be between the ages of 17 and 18½ and will have no prior military service. Upon completion of the six months active duty for training the individuals will be assigned to Reserve combat and support units.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—W. PALMER DEARING, M.D.

SHOCK FROM BURNS

Oral salt and soda solution in large amounts is an effective emergency treatment for shock due to burns, according to a controlled clinical investigation conducted in Peru by Peruvian and American scientists headed by Dr. Kehl Markley, National Institutes of Arthritis and Metabolic Diseases, Bethesda, Md.

The work by Dr. Markley confirmed the laboratory investigations of Dr. Sanford M. Rosenthal, Herbert Tabor, and R. Carl Millican of the Public Health Service.

The solution is made by dissolving a teaspoonful of table salt and one-half teaspoonful of baking soda in a quart of drinking water. *Oral* administration to *conscious* patients should be made in large amounts even up to 6-7 quarts during the first twelve hours after injury.

The importance of this work is appreciated in the treatment of burns in the event of mass casualties.

DEPUTY CHIEF BSS

Dr. Theodore J. Bauer has been named as Deputy Chief of the Bureau of State Services, Public Health Service. He replaces Dr. Leroy E. Burney who was recently appointed Surgeon General of the Service.

Dr. Bauer, who has been Chief of the Communicable Disease Center at Atlanta, Georgia, in this new position will be principal assistant to Dr. Otis L. Anderson, Chief of the Bureau of State Services.

APPOINTMENT

Dr. A. L. Chapman has been appointed as chief of the Division of Special Health Services, Public Health Service. He replaces Dr. Seward E. Miller who has been given leave of absence to accept a teaching and research position at the University of Michigan.

NIH APPOINTMENTS

Dr. Seymour J. Kreshover has been appointed as Associate Director of the National Institute of Dental Research, Bethes-

da, Md. He comes to this position from the Medical College of Virginia where he was Professor of Oral Pathology and Diagnosis, Director of Dental Research, and Director of Graduate and Postgraduate Studies. During World War II he served with the Army Dental Corps.

Dr. F. Earle Lyman has been appointed as Chief of Extramural Programs. He has served as Executive Secretary of the Morphology and Genetics Study Section and the Parasitology and Tropical Medicine Study Section, Division of Research Grants, National Institutes of Health.

CHIEF COMMUNICABLE DISEASE CENTER

Dr. Robert J. Anderson has been named as chief of the Communicable Disease Center, Public Health Service, in Atlanta, Georgia. Prior to this new assignment Dr. Anderson was assistant chief of the Division of Special Health Services in Washington.

For the past two years he has directed operational research in tuberculosis, chronic diseases, venereal disease, occupational health, and heart disease control activities. He is a graduate of the University of Minnesota Medical School.

REGULAR CORPS EXAMINATION

A competitive examination for appointment of Medical Officers to the Regular Corps of the United States Public Health Service will be held on November 27, 28, 29, and 30, at various places throughout the United States.

Application forms may be obtained by writing to the Chief, Division of Personnel, Public Health Service, Dep't. of Health, Education, and Welfare, Washington 25, D.C.

NEW OFFICERS

A number of physicians, nurses, sanitary engineers, and pharmacists have been appointed to the inactive reserve component of the commissioned officer corps of the Public Health Service recently.

These officers will serve in the capacities for which their professional training and experience have fitted them. They will be called out principally to reinforce the staffs of official State and local health agencies and to augment the Public Health Service operating staff.

TRAINING PROGRAM

The Public Health Service has launched a program for the public health training of physicians, dentists, nurses, sanitary engineers, health educators, and medical social workers. The stipends given are: post-doctoral $4,800; post-master $3,600; post-bachelor $3,000; pre-bachelor $2,400. Further information can be obtained from the Bureau of State Services, Public Health Service, Dep't. of Health, Education, and Welfare, Washington 25, D.C.

RESEARCH FELLOWSHIPS

A Senior Research Fellowship program, administered by the National Institutes of Health, Public Health Service, is now in operation. During the first year, this program will provide for a total of 40 to 50 awards to the Nation's medical schools, dental schools, and schools of public health. These awards will be increased by a like number each year for five years until a total of 200 to 250 such fellowships are awarded annually.

The awards will be for a maximum of $10,000 a year and may be retained for as long as five years. Only three applications may be made per year by each school. The program is designed to attract and hold able investigators in the preclinical sciences.

Requests for information concerning this program should be addressed to the Chief, Research Fellowship Program, Division of Research Grants, National Institutes of Health, Bethesda 14, Maryland.

Veterans Administration

Chief Medical Director—WILLIAM S. MIDDLETON, M.D.

Deputy Chief Med. Dir.—R. A. WOLFORD, M.D.

KOREAN GI BILL

The Korean GI Bill has reached its fourth anniversary with 1,500,000 Korean veterans having been given an opportunity for training in the careers they wish to follow. It is expected that about 1,000,000 more veterans eligible for training under the Korean GI Bill will be given that training before the program expires in 1965.

The peak load in this training program is expected during 1956-57 at which time three-quarters of a million veterans are expected to be in training.

SURVIVOR BENEFITS

Under Public Law 881, the *Survivors Benefit Act,* signed by President Eisenhower on August 1 certain changes have been made which affect dependents of military personnel who die in the military service.

After January 1, 1957 the automatic indemnity against death ("$10,000 free insurance") ends. The five-year term insurance program for eligible post-Korea veterans and six-month enlistees will also end on January 1, 1957. The special non-participating term or permanent plan insurance for the service-connected disabled, however, is not affected.

The new program authorized by the law will be a more liberal one and will equalize benefits for those dependents of military personnel who die while on active duty.

In view of the number of changes which are made it would be wise for everyone to restudy his insurance program.

ASSIGNMENT

Dr. Ivan F. Bennett has been assigned as Chief of Psychiatric Research at the Veterans Administration Central Office in Washington. He succeeds Dr. Richard L. Jenkins who has been reassigned as Director of the Psychiatric Evaluation project with headquarters at Mt. Alto VA hospital, Washington, D.C.

Miscellaneous

ADENOVIRUS DISEASE

We have been hearing a lot recently about the APC viruses and the RI viruses, and a'so the ARD viruses. Well, why not be practical and lump them all together and call the disease the *adenovirus disease* as suggested by a group of prominent virus workers in an article in *Science* (July 20).

The workers who make this suggestion are no less than: Drs. Joseph A. Bell and R. J. Huebner, National Institutes of Health, Bethesda, Md.; John H. Dingle, Western Reserve University; John F. Enders, Children's Medical Center, Boston; Thomas Francis, Jr., University of Michigan; Maurice Hilleman, Walter Reed Army Institute of Research; and A. M. M. Payne, World Health Organization, Geneva.

RESERPINE DOSAGE

The Food and Drug Administration has issued a letter recommending a reduction in the dosage of reserpine. Parts of that letter are reproduced here:

". . . When reserpine was first introduced the available evidence suggested that it was a drug of very low toxicity, with no contraindications, and with a wide range of safe dosage. As the drug has been used more extensively it has become increasingly apparent that reserpine is not the innocuous substance it was first thought to be, that there are contraindications, and that the safe level for long term outpatient maintenance is lower than the originally recommended dosage schedule.

". . . In the treatment of hypertension, or of anxiety states on an outpatient basis, it is the present consensus that the usual recommended maintenance dose should be 0.25 mg. daily. While doses up to 1.0 mg. daily may safely be recommended for initiation of therapy, they usually should not be continued for longer than a week. No substantial benefit is obtained by larger doses sufficient to compensate for the added haz-

ard. An occasional patient may require up to 0.5 mg. daily as a maintenance dose, but if adequate response is not obtained from this dosage, it is well to consider adding another hypotensive agent to the regime rather than increasing the dose of reserpine.

"Continued use of reserpine in doses of 0.32 mg. daily has been shown to increase gastric secretion and gastric acidity in a significant number of cases whereas daily doses of 0.25 mg. have not been shown to do so. Doses of 0.5 mg. daily for as short a time as two weeks produced this effect in most of the individuals tested and have resulted in massive gastro-intestinal hemorrhage or perforation of an ulcer. More important, reserpine in daily doses of 0.5 or 1.0 mg. produces severe depression in a significant number of individuals, and has precipitated a very considerable number of suicidal attempts, some of them successful. Many of these depressions have been severe enough to necessitate long-term hospitalization in psychiatric institutions. For these reasons it is believed that reserpine in daily doses above 0.25 mg. is contraindicated and in lower doses should be used with caution in patients with a history of mental depression, peptic ulcer or ulcerative colitis. . . ."

FELLOWSHIPS AVAILABLE

The National Foundation for Infantile Paralysis announces that postdoctoral fellowships are available for full time study in preparation for careers in research or academic medicine, or in the clinical fields of psychiatry; rehabilitation; orthopedics; the management of poliomyelities and preventive medicine.

Also scholarships are awarded for the basic professional education of medical social workers and physical therapists.

For further information write to:

Division of Professional Education
The National Foundation
for Infantile Paralysis
120 Broadway
New York 5, New York

ELECTRICAL TECHNIQUES CONFERENCE

The Ninth Annual Conference on Electrical Techniques in Medicine and Biology will be held November 7-9 in New York City. The Arrangements Chairman is Mr. R. S. Gardner, AIEE Headquarters, 33 West 39th St., New York 18, N.Y.

CONGRESS OF MILITARY MEDICINE AND PHARMACY

The XV International Congress of Military Medicine and Pharmacy will meet in Belgrade, Yugoslavia, September 29 to October 5, 1957. The XIX Session of the Office for Military Medical Documentation will meet at the same time in Opatija, Yugoslavia.

Further information may be obtained from the Secretary of the Congress whose address is: Nemanjina 15, Belgrade, Yugoslavia.

MEDICAL HISTORY

Franz Joseph Gall, Inventor of Phrenology and His Collection is a paper back booklet by Drs. Erwin H. Ackerknecht and Henri V. Vallois. The original work which was in French has been translated into this English edition by Claire St. Léon. Those interested in medical history will want a copy of this booklet which sells for $1.50 and is obtainable from the Department of History, University of Wisconsin Medical School, Madison, Wis.

A Treatise of the Diseases of the Chest and Their Diagnosis, Established on a New Principal by Means of Acoustic Instruments by R. T. H. Laennec, translated by John Forbes, M.D. (1823) has been reproduced by the Department of History, University of Buffalo. This is available for $1.50.

BINDERS

Binders for your copies of MILITARY MEDICINE are now available through your Association at the price of $3.00 prepaid. Send your order to the office at 1726 Eye St., N.W., Washington 6, D.C.

NURSE ANESTHETISTS

A member of the Association writes that nurse anesthetists are needed at the Hamot Hospital, Erie, Pa. For further information address the Personnel Director of that hospital.

ALCOHOL

Alcoholism is said to be second only to war as a destroyer of human life. *Science News Letter.*

AUTOMOBILES

Of every 4 automobiles in the world, 3 are in the U.S. In metropolitan Los Angeles, there are almost twice as many as in all South America. St. Louis car population is twice that of Japan; and New York and Chicago have as many as France and Switzerland.—*Survey Bulletin.*

DRIVE CAREFULLY

MOVIE FILM

A Place to Live is a 16 mm., black and white, sound film which has been prepared by the Committee on Aging of the National Social Welfare Assembly, New York. Running time is 24 minutes. The film is procurable from Wm. S. Merrell Co., Cincinnati 15, Ohio.

SOMETHING NEW

A *blood-shipping container* which will increase the time safety factor 25 per cent has been developed for the Blood Bank Foundation, Nashville, Tenn. This is a corrugated box with laminations of aluminum foil which allows for the use of ice. The expense of returning the container is eliminated.

De-Ionized water from the tap water, said to be comparable to single and even triple-distilled water (by means of a special filter) can be obtained by the use of an apparatus now available.

WHO PUBLICATIONS

Serology of Syphilis $2.00
Bull. Vol. 14, No. 2/56

Venereal Disease, A Survey (Legal). .70
Reprint from Vol. 7

Malaria Control in Africa ..... .30
Chronicle, Vol. 10, No. 3/56

Work of WHO: 1955. Report. ..... .30
Chronicle, Vol. 10, No. 4/56

Syphilis Serology; BCG Vacc. ..... .30
Chronicle, Vol. 10, No. 5/56

Typhoid Vaccines; Water Pollution .. .30
Chronicle, Vol. 10, No. 6/56

Malaria Conference—Asia ..... .30
Tech. Report No. 103/56

Food Hygiene. A Report ..... .30
Tech. Report No. 104/56

Psychiatric Nursing. A Report ..... .30
Tech. Report No. 105/56

Trachoma. A Report ..... .30
Tech. Report No. 106/56

Food Additives. A Report ..... .30
Tech. Report No. 107/56

Biological Standardization ..... .30
Tech. Report No. 108/56

Any of above may be obtained from the Columbia University Press, IDS, 2960 Broadway, New York 27, N.Y.

Honor Roll

Since the publication of our last list, the following sponsored one or more applicants for membership in the Association:

Lt. Col. E. W. Brannon, USAF (MC)
Capt. R. F. Carmody, (MC), USN
1/Lt. Cletus A. Carr, MSC, USA
Rear Adm. W. Dana, (MC), USN
Lt. Col. Ida W. Danielson, ANC, Ret.
Pharm. Dir. Thomas A. Foster, USPHS
Major Della R. Johnson, ANC
Harold J. Meier, M.D.
Major Floyd M. Morris, USAF (MSC)
Col. Walter H. Moursund, Jr., MC, USA
Jesse T. Nicholson, M.D.
Med. Dir. Byron Olson, USPHS
Med. Dir. R. F. Reider, USPHS
Med. Dir. Wm. L. Ross, USPHS
Capt. Roger Rothrock, MSC, USAR
Major Merrill J. Shepro, DC, USAR
Major Edw. J. Tomsovic, MC, USA
Col. Floyd L. Wergeland, MC, USA
Frederick S. Wetherell, M.D.
Capt. George F. Yost, MC, USA

OBITUARIES

Lt. Col. Michael H. Teitelbaum, MC, USAR

Michael H. Teitelbaum, Lieutenant Colonel, U. S. Army, Reserve, died August 10 in the Columbia-Presbyterian Medical Center, New York City, at the age of 58.

Born in Montreal, Canada, Colonel Teitelbaum received his medical degree from McGill University in 1925. A few years later he went to New York and served at the Manhattan State Hospital and Bellevue and Kings County Hospitals before joining the staff of the Neurological Institute. During World War II he served with the 121st Base Hospitals in England and was consulting psychiatrist in the European Theater. In 1945 he was retired for physical disability.

He was a fellow of the American Psychiatric Association and a member of the New York Academy of Medicine, the New York Neurological Society, the New York Society for Clinical Psychiatry, and the Association of Military Surgeons.

He is survived by his widow, a son and two daughters, who reside at 50 Fleetwood Ave., Mount Vernon, N.Y.

Col. James C. Kimbrough, U. S. Army, Ret.

James Claude Kimbrough, Colonel, U. S. Army, Retired, died at Walter Reed Army Hospital, August 19 at the age of 68.

Colonel Kimbrough was a native of Madisonville, Tenn. He received his bachelor of arts degree in 1909 from Hiawassee College (Tenn.) and his medical degree from Vanderbilt University in 1916, and entered the military service in 1917. He specialized in urology and in that field became an authority, contributing many papers to its literature.

From 1919-1921 Colonel Kimbrough served in the European Theater as a urologist at an Army hospital. During World War II he was Chief of Professional Services of the European Theater. Although reaching the statutory age for retirement on August 31, 1948, Colonel Kimbrough was retained on active duty with station at Walter Reed Army Hospital. In June of 1953 the Senate passed a bill (S 3359) authorizing the President to designate Colonel Kimbrough as Consultant in Urology to the Walter Reed Army Medical Center, such position to carry full pay and allowances in lieu of retired pay. He had been active in that position until his recent illness.

Many honors came to this distinguished physician. In May 1955 he was elected president of the American Urological Association, Mid-Atlantic Section, which was the first time that honor was bestowed on a military man.

Colonel Kimbrough held the "A" rating as urology specialist awarded by the Army Surgeon General. He was a Fellow of the American College of Surgeons; a Diplomate of the American Board of Urology; a member of the Royal Society of Medicine of London (Hon.), and of the Academy of Surgery, Paris (Hon.).

Colonel Kimbrough was a member of the Association of Military Surgeons of the United States (1924) and had contributed to its journal, MILITARY SURGEON (now MILITARY MEDICINE). He was the recipient of the Purple Heart (WWI), the Bronze Star Medal, and Legion of Merit (WWII).

He is survived by his wife, Pauline, and daughter, Jane of 9320 Harvey Road, Silver Spring, Md.; also one brother and two sisters.

Interment was at Arlington National Cemetery.

THE WHITE HOUSE

WASHINGTON

August 30, 1956

Dear Admiral Dana:

It is always a pleasure to send greetings to the Association of Military Surgeons of the United States. And this year I welcome you and your guests from abroad to our capital city on the occasion of your Sixty-third Annual Convention.

Our military surgeons and their medical associates deserve the highest commendation for their service to alleviate human suffering. Their great and continuing contributions to the advance of medical science is recognized not only in the military field but by peoples throughout the world.

Please accept my best wishes for a most successful convention.

Sincerely,

Dwight D. Eisenhower

Rear Admiral W. Dana (MC) USN
President
The Association of Military Surgeons
of the United States
Suite 718, 1726 Eye Street, N. W.
Washington 6, D. C.

ASSOCIATION OF MILITARY SURGEONS OF U.S. ANNUAL CONVENTION, HOTEL STATLER WASHINGTON, D.C.—NOV. 12, 13, AND 14, 1956

Registration

SUNDAY, NOVEMBER 11, 1-5 P.M.
MONDAY, NOVEMBER 12, 8:00 A.M.

Reserve Officers Register for Credit Points.

THEME—"THE EXPANDING HORIZONS OF MILITARY MEDICINE."

MONDAY, NOVEMBER 12
Presidential Ballroom
9:00 A.M.

Presiding—REAR ADMIRAL WINFRED P. DANA, MC, USN, President

Association President's Address
Rear Admiral Winfred P. Dana, MC, USN, Assistant Chief for Aviation and Operational Medicine and Research and Medical Military Specialities, Bureau of Medicine and Surgery, Department of the Navy, Washington, D.C.

Welcoming Remarks
Edward H. Cushing, M.D., Deputy Assistant Secretary of Defense (Health and Medical), Washington, D.C.

Guest Speaker
Detlev W. Bronk, Ph.D., President, National Academy of Sciences, Washington, D.C.

Expanding Horizons / Career Incentives
Rear Admiral Bruce E. Bradley, MC, USN, Acting Surgeon General, Department of the Navy, Washington, D.C.

Break, Visit Commercial and Scientific Exhibits

Medicare Law
Major General Silas B. Hays, MC, USA, Surgeon General, Department of the Army, Washington, D.C.

Expanding Horizons of Aviation Medicine
Major General Dan C. Ogle, USAF, (MC), Surgeon General, Department of the Air Force, Washington, D.C.

Expanding Horizons: Teamwork in Civilian and Military Health Service
Leroy E. Burney, M.D., Surgeon General, U. S. Public Health Service, Department of Health, Education and Welfare, Washington, D.C.

Expanding Horizons in Research and Education in the Veterans Administration
Roy A. Wolford, M.D., Deputy Chief Medical Director, Veterans Administration, Washington, D.C.

Luncheon—12:00 Noon

MONDAY AFTERNOON, NOVEMBER 12
2:30 P.M.—*Presidential Ballroom*

Presiding—WINCHELL MCK. CRAIG, M.D., Rear Admiral, MC, USNR (Ret.), Section of Neurological Surgery, Mayo Clinic, Rochester, Minnesota, Past President, Association of Military Surgeons

Hormone-Producing Tumors
Roy Hertz, M.D., Chief, Endocrinology Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland

Replacement Arthroplasty in Military Patients
Lt. Col. Earl W. Brannon, USAF, MC, 3700th U. S. Air Force Hospital, Lackland Air Force Base, San Antonio, Texas

Preliminary Studies on Bovine Embryo Skin Grafts
Lt. A. N. Silvetti, MC, USNR, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland
Lt. J. H. Berrian, MSC, USN, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland
Lt. Antonio Fernandez, MC, Cuban Navy, Havana, Cuba
John M. Converse, M.D., Associate Professor Clinical Surgery, New York University College of Medicine, New York City
Blair O. Rogers, M.D., Clinical Instructor in Plastic Surgery, New York University College of Medicine, New York City
Dr. Cornelia Cotton, Research Bacteriologist, University of Maryland, College Park, Maryland
Dr. Robert Byrne, Research Bacteriologist, University of Maryland, College Park, Maryland
(Presented by Doctor Silvetti and Doctor Rogers)

Break, Visit Commercial and Scientific Exhibits

Experiences with the Adenovirus Vaccines in Navy Recruits
(Cooperative studies of the U. S. Navy, the University of Chicago and the U. S. Public Health Service)

Joseph A. Bell, M.D., Chief, Epidemiology Section, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland

TUESDAY MORNING, NOVEMBER 13
8:30 A.M.—*Presidential Ballroom*

Presiding—BRIGADIER GENERAL STANHOPE BAYNE-JONES, MC, USAR (Ret.), Formerly Technical Director of Research, Office of the Surgeon General, Department of the Army, Washington, D.C.

Significance of Leptispirosis in Military Medicine

Lt. Col. Leslie C. Murphy, VC, USA, Deputy Director, Division of Veterinary Medicine, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C.

Rapid Extra Corporeal Oxygenation of Banked Blood

Capt. William G. Malette, USAF, MC, Resident Surgeon, Denver Veterans Administration Hospital, Denver, Colorado
William B. Summers, M.D., Denver Veterans Administration Hospital, Denver, Colorado
Ben Eiseman, M.D., Chief of Surgical Service, Denver Veterans Administration Hospital, Denver, Colorado and Associate Professor of Surgery, University of Colorado School of Medicine, Denver, Colorado (Presented by Dr. Eiseman)

Military Operations in Radiologically Contaminated Areas

Lt. Col. James B. Hartgering, MC, USA, Director, Division of Physiology and Pharmacology, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C.

Anorganic Bone—Chemistry, Anatomy and Biological Reaction

CDR Fred L. Losee, DC, USN, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Maryland
Lloyd A. Hurley, M.D., Harland Memorial Hospital, Harland, Kentucky
LCDR Philip Boyne, MC, USN, Naval Dispensary, Department of the Navy, Washington, D.C.
(Presented by Doctor Hurley and Doctor Losee)

Break, Visit Commercial and Scientific Exhibits

Late X-Ray Evidence of Spontaneous Reduction of Dislocation of Cervical Intervertebral Discs

Benjamin H. Kesert, M.D., Colonel, U. S. Army Reserve, Consultant in Neurology, Veterans Administration Hospital, Hines, Illinois; Associate, Department of Neurology and Psychiatry, Northwestern University Medical School, Chicago, Illinois

X-Ray Cineradiography and Portable X-Ray Units

Adolph T. Krebs, M.D., Head, Radiobiology Department, Army Medical Research Laboratory, Fort Knox, Kentucky

11:10 A.M.

Convocation in honor of distinguished foreign visitors

1:30 P.M.
International Luncheon
Presidential Ballroom

Guest Speaker—Admiral Arthur W. Radford, USN, Chairman, Joint Chiefs of Staff, Washington, D.C.

TUESDAY AFTERNOON, NOVEMBER 13
3:00 P.M.—*Presidential Ballroom*

Presiding—COLONEL VICTOR A. BYRNES, USAF, MC, Director of Professional Services, Office of the Surgeon General, Department of the Air Force, Washington, D.C.

Preservation of Whole Blood by Freezing

Harold F. Meryman, M.D., Department of Internal Medicine, Yale Medical School, New Haven Connecticut

Cold Weather Survival

Maj. Stanley Lutz, Jr., USAF MC, Assistant Surgeon, Headquarters, 18th Air Force, Donaldson Air Force Base, South Carolina

Atherosclerosis and Lipid Metabolism

Daniel Steinberg, M.D., Chief, Section on

Metabolism, National Heart Institute, National Institutes of Health, Bethesda, Maryland

Break, Visit Commercial and Scientific Exhibits

Results of Early Studies on Effects of Sleep Deprivation

David McK. Rioch, M.D., Director, Division of Neuropsychiatry, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C.

A Hearing Evaluation of an Air Force Squadron of Jet Aircraft Maintenance Personnel

Capt. R. G. Hansen, USAF, MSC, Wright Air Development Center, Wright-Patterson Air Force Base, Ohio

Capt. C. Westerbeck, USAF, MC, Wright Air Development Center, Wright-Patterson Air Force Base, Ohio

(Presented by Captain Hansen)

WEDNESDAY MORNING, NOVEMBER 14

8:30 A.M.—*Presidential Ballroom*

Presiding—WILLIAM S. MIDDLETON, M.D., Chief Medical Director, Veterans Administration, Washington, D.C.

Neurological Complications of Spinal Anesthesia

Max S. Sadove, M.D., Professor of Surgery (Anesthesia) and Chief, Section on Anesthesia, University of Illinois College of Medicine; Consultant and Chief, Anesthesia Section, Veterans Administration Hospital, Hines, Illinois, and Westside Veterans Administration Hospital, Chicago, Illinois

Myron J. Levin, M.D., Clinical Professor of Anesthesia, University of Illinois College of Medicine, Chicago, Illinois; Assistant Chief, Anesthesia Section, Veterans Administration Hospital, Hines, Illinois

Louis J. Oropallo, M.D., Resident, Anesthesia Section, Veterans Administration Hospital, Hines, Illinois

(Presented by Doctor Levin)

Radiation Control Problems Aboard Nuclear Submarines

LCDR John H. Ebersole, MC, USN, Medical Officer, USS *Seawolf* (SSN 575)

Break, Visit Commercial and Scientific Exhibits

Clotting Factor Abnormalities in Chronic Liver Disease

Samuel I. Rapaport, M.D., Chief, Hematology and General Medicine Section, Veterans Administration Hospital, Long Beach, California; Assistant Clinical Professor of Medicine, University of California Medical School, Los Angeles, California

Joseph R. Goodman, Ph.D., Head, Physiological Research Unit, Medical Research Program, Veterans Administration Hospital, Long Beach, California; Research Associate, Department of Biochemistry and Nutrition, University of Southern California Medical School, Los Angeles, California

(Presented by Doctor Goodman)

The Wholesomeness of Irradiated Food and Its Military Implications

H. F. Kraybill, Ph.D., Medical Nutrition Laboratory, Fitzsimons Army Hospital, Denver, Colorado

Col. Tyron E. Huber, MC, USA, Research and Development Division, Office of the Surgeon General, Department of the Army, Washington, D.C.

(Presented by Colonel Huber)

Practical Application of Pulmonary Physiology for Small Hospitals

Maj. Robert B. Stonehill, USAF, MC, Chief of Pulmonary Disease Section, Lackland Air Force Hospital, San Antonio, Texas

11:00 A.M.

Business Meeting

Luncheon

WEDNESDAY AFTERNOON, NOVEMBER 14

1:50 P.M.—*Presidential Ballroom*

Presiding—DAVID E. PRICE, M.D., Assistant Surgeon General, U. S. Public Health Service, Department of Health, Education and Welfare, Washington, D.C.

Future Trends in Military Aviation Medicine

Capt. Ashton Graybiel, MC, USN, Director of Research, School of Aviation Medicine, Naval Air Station, Pensacola, Florida

Experiences in Evacuation of Severely Burned Patients

Lt. Col. Robert D. Pillsbury, MC, USA, Deputy Commander, Surgical Research Unit, Brooke Army Medical Center, Fort Sam Houston, Texas

Maj. Bruce G. MacMillan, MC, USA, General Surgeon, Surgical Research Unit, Brooke Army Medical Center, Fort Sam Houston, Texas

Lt. Col. Curtis P. Artz, MC, USA, Director, Surgical Research Unit, Brooke Army Medical Center, Fort Sam Houston, Texas

(Presented by Colonel Pillsbury)

The Effect of Thyroid Ablation upon Serum Cholesterol and β-Lipoprotein Spectrum

Warner H. Florsheim, Ph.D., Assistant Chief, Radioisotope Service, Veterans Administration Hospital, Long Beach, California; Assistant Clinical Professor of Physiological Chemistry, University of California Medical School, Los Angeles, California

Joseph R. Goodman, Ph.D., Head, Physiological Research Unit, Investigative Medicine Service, Long Beach Veterans Administration Hospital, Long Beach, California; Research Associate in Biochemistry, University of California Medical School, Los Angeles, California

M. E. Morton, Ph.D., M.D., Formerly Director, Radioisotope Unit, Veterans Administration Hospital, Long Beach, California

(Presented by Doctor Goodman)

Nurse Anesthetist Refresher Course

Capt. Richard J. Ward, USAF, MC, 7100th U. S. Air Force Hospital, Wiesbaden, Germany

Capt. Clifton L. Dance, Jr., USAF MC, 7100th U. S. Air Force Hospital, Wiesbaden, Germany

(Presented by Captain Ward)

Break, Visit Commercial and Scientific Exhibits

Medical Education for National Defense

Col. Shelden S. Browton, USAF, MC, Director of Staff, Office of Secretary of Defense (Health and Medical), Washington, D.C.

The Tranquillizing Drugs

Edward V. Evarts, M.D., Acting Chief, Laboratory of Clinical Sciences, National Institute of Mental Health, National Institutes of Health, Bethesda, Maryland

Effects of Microwaves—Current and Proposed Research

Maj. Daniel B. Williams, USAF, MC, School of Aviation Medicine, U. S. Air Force, Randolph Air Force Base, Texas

SECTION MEETINGS

Tuesday, Nov. 13	Section	Room
9:00 A.M.-12:00 NOON	Dental	Pan American
9:00 A.M.-12:00 NOON	Veterinary	South American
3:00 P.M.- 4:30 P.M.	Medical Specialists	South American
3:00 P.M.- 4:30 P.M.	Sanitary Engineers	Pan American
Wednesday, Nov. 14		
9:00 A.M.-10:50 A.M.	Sustaining Membership	South American
2:30 P.M.- 4:30 P.M.	Nurses	South American

SEE FOLLOWING PROGRAMS

Tuesday, November 13

Dental Section

9:00 A.M.—*Pan American Room*

Presiding—Colonel S. O'Grady, USAF (DC), Deputy for Dental Professional Standards, Assistant for Dental Services, Office of the Surgeon General, Department of the Air Force, Washington, D.C.

Role of Therapeutic Dentifrices in Preventive Dentistry

Lt. Col. George W. Burnett, DC, USA, Chief, Department of Research, Dental Division, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D.C.

Expanding Horizons in Preventive Dentistry: The Public Health Point of View

Thomas L. Hagan, D.D.S., Director, Division of Dental Public Health, U. S. Public Health Service, Department of Health, Education and Welfare, Washington, D.C.

Break, Visit Scientific and Commercial Exhibits

Preventive Periodontics

CDR. Jerome F. Peters, DC, USN, Naval Medical Center, Bethesda, Maryland

Importance of Histologic Examination of Diseased Oral Tissue

George W. Greene, Jr., D.D.S., Oral and Pathology Branch, Armed Forces Institute of Pathology, Walter Reed Army Medical Center, Washington, D.C.

The Air Force Preventive Dentistry Program

Col. Harold E. Dilley, USAF, DC, Deputy for Preventive Dentistry and Research, Office of the Surgeon General, Department of the Air Force, Washington, D.C.

TUESDAY, NOVEMBER 13

Veterinary Section

9:00 A.M.—*South American Room*

Presiding—RAYMOND J. HELVIG, D.V.M., Acting Chief, Milk and Food Program, Division of Sanitary Engineering Services, U. S. Public Health Service, Department of Health, Education and Welfare, Washington, D.C.

Military Research in Radiation Biology

Major Max Nold, USAF, VC, Oakridge Institute of Nuclear Studies, Oakridge, Tennessee

Veterinarian in Aero Medical Research

Lt. Col. John T. Stapp, USAF, MC, Holloman Air Development Center, Holloman Air Force Base, New Mexico

Break, Visit Scientific and Commercial Exhibits

Air Force Concept in Veterinary Medicine

Lt. Col. G. P. Wiedeman, USAF, MC, Deputy Chief, Plans and Operations Division, Office of the Surgeon General, Department of the Air Force, Washington, D.C.

A New Prosthetic Hip Joint for the Dog and Its Application in Man.

Col. Harry A. Gorman, USAF, VC, School of Aviation Medicine, U. S. Air Force, Randolph Air Force Base, Texas

TUESDAY, NOVEMBER 13

Medical Specialists Section

3:00 P.M.—*South American Room*

Presiding—MISS ELEANOR LOOMIS, Senior Therapist and Acting Chief, Physical Medicine and Rehabilitation Branch, Division of Hospitals, U. S. Public Health Service, Department of Health, Education and Welfare, Washington, D.C.

Medical Research Today

Stuart M. Sessoms, M.D., Assistant Director, The Clinical Center, National Institutes of Health, Bethesda, Maryland

Panel—Medical Research in Total Research Hospital Setting and Its Impact on the Nutrition, Physical Therapy, and Occupational Therapy Services

John L. Fahey, M.D., General Medicine Branch, National Cancer Institute, The Clinical Center, National Institutes of Health, Bethesda, Maryland

Miss Ruth Hadra, Occupational Therapist (OTR), Occupational Therapy Service, Rehabilitation Department, Clinical Center, National Institutes of Health, Bethesda, Maryland

Mrs. Eleanor V. Brown, Assistant Chief, Physical Therapist (PTR), Physical Therapy Department, Clinical Center, National Institutes of Health, Bethesda, Maryland

Miss Ann Reimer, Chief, Patient Dietetic Service, Nutrition Department, The Clinical Center, National Institutes of Health, Bethesda, Maryland

TUESDAY, NOVEMBER 13

Sanitary Engineers Section

Joint Meeting with the Conference of Federal Sanitary Engineers

3:00 P.M.—*Pan American Room*

Presiding—LT. COL. FLOYD L. BERRY, MSC, USA, Preventive Medicine Division, Office of the Surgeon General, Department of the Army, Washington, D.C.

Meeting called to order

Opening remarks—Mr. Gordon E. McCallum, President, Conference of Federal Sanitary Engineers, U. S. Public Health Service, Washington, D.C.

Keynote—Expanding Horizons of Sanitary Engineering

Mark D. Hollis, Ph.D., President Elect, Conference of Federal Sanitary Engineers, Assistant Surgeon General and Chief Engineer, U. S. Public Health Service, Washington, D.C.

Removal of CBR Contaminants from Water

Mr. Harry N. Lowe, Chief, Sanitary Engineering Branch, Engineer Research and Development Laboratory, Fort Belvoir, Virginia

Break, Visit Scientific and Commercial Exhibits

The Air Pollution Program of the Public Health Service

Mr. Vernon G. MacKenzie, Assistant Chief for Research and Development, Division of Sanitary Engineering Services, U. S. Public Health Service, Washington, D.C.

Report from the National Society of Professional Engineers

Colonel M. J. Blew, National Society of Professional Engineers, Washington, D.C.

Is Industry Outbidding Government for Sanitary Engineers?

Mr. Edmund J. Laubusch, Sanitary Engineering Representative, The Chlorine Institute, New York, New York

Report from Secretary-Treasurer

Lt. Colonel Alvin P. Meyers, Jr., USAF, American Sanitary Engineering Intersociety Board, Omaha, Nebraska

Conference Matters

WEDNESDAY, NOVEMBER 14

Sustaining Membership Section

South American Room

9:00-10:50 A.M.

Presiding—C. W. SHILLING, M.D., Special Assistant to the Director, Division of Biology and Medicine, U. S. Atomic Energy Commission

Program to be announced.

WEDNESDAY, NOVEMBER 14

Nurses Section

2:30 P.M.—*South American Room*

Symposium: Nursing Is Changing, Are You?

Moderator: Miss Agnes Ohlson, President, American Nurses Association, 2 Park Avenue, New York, New York

Searching for Know How

Captain Drusilla Poole, NC, USA, Director, In-Service Education Program, William Beaumont Army Hospital, Fort Bliss, Texas

A Therapeutic Community—As a Nurse Sees It

LCDR Lina Stearns, NC, USN, Neuropsychiatric Nursing Supervisor, U. S. Naval Hospital, Oakland, California

Nursing Assistants, The New Look

Lt. Col. Dorothy Zeller, USAF, NC, Chief Nurse, U. S. Air Force Hospital, Parks Air Force Base, California

Miss Elsie Burdan, Chief, Nursing Branch, Division of Hospitals, U. S. Public Health Service, Department of Health, Education and Welfare, Washington, D..C

Major Elizabeth Breitung, NC, USA, Hospital Methods Improvement Branch, Medical Plans and Operations Division, Office of the Surgeon General, Department of the Army, Washington, D.C.

Mr. Richard N. Elwell, Psychiatric Nursing Specialist, Veterans Administration Nursing Service, Central Office, Washington, D.C.

HONORS NIGHT DINNER—PRESIDENTIAL BALLROOM—7:30 P.M.—NOV. 14

Presentation of Awards
Entertainment
Dancing

LADIES EVENTS

MONDAY, NOVEMBER 12

Visit Washington Mosque

TUESDAY, NOVEMBER 13

Luncheon and Fashion Show at National Naval Medical Center
Bethesda, Maryland
Tea with Mrs. Bartholomew Hogan, Wife, Surgeon General, U. S. Navy

WEDNESDAY, NOVEMBER 14

White House Tour
Potomac River Cruise
Visit an Embassy (Tentative)

SCIENTIFIC EXHIBITS

DEPARTMENT OF THE ARMY

"New Horizons in Army Medicine," by Lt. Col. F. W. Timmerman, MC, USA, Research and Development Division, Office of The Surgeon General, Department of the Army.

"Training Aids of the USA Medical Service," Joint exhibit of The Office of The Surgeon General, Department of the Army and the AFIP.

"Studies of Experimental and Clinical Frostbite," by Lt. Colonel Joseph R. Blair, MC, USA, formerly of Harvard Medical School, now Commanding Officer, Army Medical Research Laboratory, Fort Knox, Ky.

DEPARTMENT OF THE NAVY

"Experimental Hepatic Surgery Employing Differential Hypothermia," by Lt. Charles Huggins, MC, USNR and Lt. Edwin L. Carter, MC, USNR, Naval Medical Research Institute, National Naval Medical Center.

"Naval Medical Service with the First Marine Division in Korea," by Capt. William W. Ayers, MC, USN, AFIP and Captain Roald N. Grant, MC, USN, U. S. Naval Hospital, St. Albans, New York.

DEPARTMENT OF THE AIR FORCE

"Medical Aspects of Aircraft Accident Investigation," by Colonel William C. Marett, USAF, MC, Office of The Surgeon General, Department of the Air Force.

"Mechanisms in Prevention of Penetrating Wounds of the Eye from Small High Speed Splinters," by H. W. Rose, M.D., Randolph Air Force Base School of Aviation Medicine.

DEPARTMENT OF DEFENSE

"Aeromedical Evacuation," by Colonel L. R. Braswell, USAF, MC, MATS.

U. S. PUBLIC HEALTH SERVICE

"Epileptogenic Cerebral Cortex," by Mr. James J. Culhane, USPHS.

VETERANS ADMINISTRATION

"Executive Ability + Scientific Knowledge = a Successful Dietitian," Dietetic Service, VA.

"Rehabilitation Follow-up—Medical Responsibility in Training the Whole Man," by Doctor A. B. C. Knudsen, Director of Physical Medicine and Rehabilitation, Veterans Administration Central Office.

"The Use of a New Respiratory Index for the Evaluation of Xanthine Drugs in Chronic Pulmonary Diseases," by S. William Simon, M.D., Allergy Clinic, Veterans Administration Center, Dayton.

ASSOCIATION OF MILITARY SURGEONS

"Horizons in Military Medicine."

INDIAN HEALTH SERVICE

"Medical Careers Among the American Indians," by Doctor James R. Shaw, Division of Indian Health.

ARMED FORCES INSTITUTE OF PATHOLOGY & NATIONAL RESEARCH COUNCIL

"Atlas of Tumor Pathology," by Dr. Helen Scoville, National Research Council, Armed Forces Institute of Pathology.

"Wound Ballistics," by Captain W. M. Silliphant, MC, USN, and Major E. H. Johnson, MC, USA, of the AFIP.

FILM PROGRAM

MODERN CONCEPTS OF EPILEPSY
(Ayerst Laboratories)

MODERN TECHNIQUES OF COLLECTING BLOOD SAMPLES
(Becton Dickinson & Co.)

EXTREMELY LIGHT ANALGESIC PLUS MUSCLE RELAXATION FOR MAJOR CARDIAC SURGERY
(Burroughs Wellcome & Co.

LOW SPINAL (MODIFIED SADDLE BLOCK) ANESTHESIA IN OBSTETRICS
(Ciba Pharmaceutical Products, Inc.)

TRANSRECTAL PROSTATIC BIOPSY
(Desitin Chemical Co.)

URINARY TRACT INFECTIONS AND THEIR TREATMENT WITH FURADANTIN
(Eaton Laboratories)

DYNAMICS OF THE TUBERCLE
(Pfizer Laboratories)

ALLERGY, IMMUNOLOGY-DIAGNOSIS-TREATMENT
(Nepra Chemical Co., Inc.)

THERAPY INFLUENCING THE AUTONOMIC NERVOUS SYSTEM
(G. D. Searle & Co.)

PREVENTIVE DENTISTRY—
a. A Basic Dental Program
b. Oral Hygiene
(U. S. Air Force)

EPIDEMIOLOGY AND CLINICAL ASPECTS OF COCCIDIOIDOMYCOSIS
(Joint VA-PHS presentation)

THE BATTALION MEDICAL OFFICER (Combat Psychiatry)
(Navy-Bu M&S)

RESUSCITATIVE CARE OF THE SEVERELY WOUNDED
(U. S. Army)

PARENTAL THERAPY
(Baxter Laboratories)

VARIDASE
(Lederle Laboratories)

NEW CONCEPTS IN THE MANAGEMENT OF THE FAILING HEART
(Varick Pharmacal Co.)

SEIZURE
(Parke, Davis & Co.)

ACUTE ABDOMINAL INJURIES
(Davis & Geck, Inc.)

INTRA-ARTICULAR INJECTIONS OF HYDROCORTISONE
(Sharp & Dohme)

RESUSCITATION FOR CARDIAC ARREST
(E. R. Squibb & Sons)

MILTOWN, A NEW TRANQUILIZING AGENT
(Wallace Laboratories)

A NEW DRUG FOR THE MANAGEMENT OF ACUTELY DISTURBED STATES
(Wyeth Laboratories)

CONTRAST RADIOGRAPHY AND CINEFLUOROGRAPHY OF THE GENITO-URINARY TRACT
(Winthrop Laboratories)

THE TECHNIQUE OF PERIDURAL ANESTHESIA FOR THORACIC SURGERY
(Astra Pharmaceutical Products, Inc.)

BOOK REVIEWS

PEPTIC ULCER. By Clifford J. Barborka, M.D., Assoc. Prof. of Medicine and Chief, Gastrointestinal Clinics, Northwestern University Medical School; and E. Clinton Texter, Jr. M.D., Assoc. in Medicine and Ass't Chief, Gastrointestinal Clinics, Northwestern University Medical School. 290 pages, illustrated. Little, Brown and Co., Boston, and Toronto. 1955. Price $7.00.

This is a 290-page treatise confined entirely to peptic ulcer.

The authors are known in the field of Gastroenterology and have written this volume primarily for the clinician. It is divided into appropriate chapters such as "Anatomy and Physiology," "Etiology," "Pathogenesis," "Symptomatology," "Medical Treatment," "Dietary Management," "Anticholinergic Drugs" and "Surgical Treatment." There is also a chapter on "Gastric Ulcer and the Ulcer-Cancer Problem." The appendix contains simple menus and recipes of foods commonly used in ulcer management. As the authors state, this text is aimed at providing useful information for the clinician. Each chapter is slanted in this direction and the physician will find it easy reading. Certain facets of management recommended by the authors would not be agreed upon by other schools in ulcer management. Each chapter is concluded by a bibliography covering the material just presented. The average clinician, resident and student will find this a handy, practical volume covering the clinical aspects of peptic ulcer.

COL. FRANCIS W. PRUITT, MC, USA

AN ATLAS OF OTOLARYNGIC PATHOLOGY. By Colonel J. E. Ash, M.D., U. S. Army, Retired; and Muriel Raum, M.D. 572 pages, 2,024 figs., on 420 plates (2 color). American Registry of Pathology, Washington, D.C. 1956. Price $20.00.

The reader of this book is impressed by the vast amount of pathologic material available to the authors in order to produce such superior slides of so many diseases. Also impressive is the way in which the material has been assembled by the editor.

I do not know of any other book which so completely covers the pathology of diseases related to otolaryngology.

The reader must bear in mind that this is not a clinical textbook, but rather, a treatise on pathology. However, the clinical picture of the various diseases illustrated in the book stimulates the student to review the clinical aspects more thoroughly as he studies the pathology. Actual treatment of the diseases is not a part of this book; however, the study of the pathology does guide the surgeon toward proper treatment and a fair prognosis.

Some related diseases are sparsely covered, such as the aplastic anemias (chronic agranulocytic angina), tuberculosis, sarcoid, etc., and yet enough is said to inspire the student to further reading on these subjects.

Chapter seven concerning the effects of excessive irradiation is timely and important. Hundreds of Air Force personnel received excess dosage during the war. This chapter should serve to place the clinician on guard for the possibilities of naso-pharyngeal malignancy for years to come.

Because of the great increase in foreign travel, especially through Central and South America, the chapter on tropical diseases is of special interest. Also excellent are the descriptions, illustrations and pathological specimens of bone tumors.

There are many outstanding publications on the pathology and clinical aspects of diseases of the larynx, trachea, oesophagus, and lungs. This treatise should be placed among them.

A "must" item for the library of the otolaryngologist and the clinical pathologist, this book would also be a valuable adjunct for study by the medical student, and would have a place in the library of any physician.

R. M. DEARMIN, M.D., M.Sc.

ELECTROCARDIOGRAPHY, FUNDAMENTALS AND CLINICAL APPLICATION. 2nd Edition. By Louis Wolff, M.D., Visiting Physician, Consultant in Cardiology and Chief of the Electrocardiographic Laboratory, Beth Israel Hospital; Assistant Clinical Professor of Medicine, Harvard Medical School, Boston, Massachusetts. 342 pages, 199 Illustrations, W. B. Saunders Co., Philadelphia. 1956. Price $7.00.

The publishing of the Second Edition of Dr. Wolff's text on Electrocardiography

offers proof of the success of the first edition.

In this edition Dr. Wolff demonstrates again his exceptional teaching ability as well as his profound knowledge of electrocardiography and the newer vectocardiographic approach.

Dividing his book into three sections Dr. Wolff in Section I guides the reader through the basic principles of electrocardiography and illustrates clearly the genesis of the normal electrocardiogram and of the variations therefrom caused by disease and injury. He presents a practical demonstration of the correlation of vectocardiography and electrocardiography so far as that is possible today.

Part II is devoted to clinical electrocardiography. Part III, an added feature of this edition, covers normal and abnormal cardiac mechanisms and rhythms and the effects of digitalis and quinidin on the electrocardiogram.

Dr. Wolff makes scant reference to the works of Scheif and Prinzmetal on the genesis of atrial arrhythmias; Prinzmetal's explanation of the WPW syndrome, or Lepeschkin's claims concerning the importance of the U-wave. There is no bibliography.

Instructively written and logically illustrated, this book will be of real value to the beginner in electrocardiography, and will be of particular assistance to those experienced in scalar electrocardiography who desire a practical introduction to vectocardiographic analysis of the electrocardiographic patterns and configurations.

CAPT. JULIAN LOVE, MC, USN

THORACIC SURGERY FOR PHYSIOTHERAPISTS. By Gladys M. Storey, S.R.N., F.C.S.P. 132 pages, illustrated. J. B. Lippincott Company (U. S. Market Only), Philadelphia. 1956. Price $3.00.

This book stresses the fact that the physical therapist must be well equipped with an intelligent understanding of "the basic problems of the disease, its diagnosis and its affect on the everyday life of the patient," if she is to be of assistance to the patient and to the thoracic surgical team. The duties of the therapist are not discussed in detail, but instead emphasis is placed upon the conditions with which she should be familiar and the cases of which will be referred to her through the physical medicine service.

The book is divided in two parts. Part I presents: Respiration and Respiratory Complications, Investigations Performed for Diagnostic Purposes, Signs and Symptoms of Value to a Physiotherapist, Thoracotomy and Thoracoplasty. Part II includes conditions for which surgical treatment may be indicated, chapter headings being: Lungs, Empyema, Chest Wall, Chest, Trauma, Oesophagus, Diaphragm, Mediastinum, Heart and Great Vessels.

The author is evidently very familiar with conditions of thoracic surgery and presents a readable, condensed study which should be of great interest to anyone concerned.

VIRGINIA A. METCALF

COLOR ATLAS OF ORAL PATHOLOGY. U. S. Naval Dental School, Bethesda, Md. J. B. Lippincott Company, Philadelphia and Montreal. 1956. Price $12.00.

It is most commendable that the National Naval Medical Center has compiled and published this 461 full-color figure text of oral pathology, compiled from the abundance of accumulated and available material and assembled in text book form for the edification of the military as well as the civilian dental personnel.

Such a text produced by the services should have the tendency to induce capable and proper officer personnel to this necessary military duty.

This excellent pictorial text depicts: Histology and Embryology, Developmental Disturbances, Diseases of the Teeth and Supporting Structures, Diseases of the Oral Mucosa and Jaws, Neoplastic Diseases.

The illustrations in the book are most impressive. Each of the 160 pages contains three uniform-size photographs or photomicrographs on the outer border with the descriptive text immediately adjacent to the illustrations.

It is becoming increasingly more necessary that the general practitioner become more familiar with oral lesions and devote at least as much time in Post Graduate study to both oral and general diseases as is devoted to restorative dentistry. This must be done, if they are to render proper professional service and direct patients into appropriate medical or surgical channels.

This book meets a definite need of the dentist.

DR. CONRAD C. GILKISON

MANAGEMENT OF STROKES. By Keith W. Sheldon, M.D. 134 pages, illustrated. J. B. Lippincott Company, Philadelphia and Montreal. (Distributed in Great Britain by Pitman Medical Publishing Co., Ltd., London.) 1956. Price $3.00.

This short monograph is a publication in book form of material that appeared in the

American Practitioner and Digest of Treatment in 1955. The author, an experienced neurologist and neurosurgeon, brings to the stroke problem a keen, practical approach. His observations reveal an astuteness of clinical judgment and discernment, coupled with concise, meaningful expressions and diagrammatic representations that warrant recommending the text to all physicians, regardless of their discipline, who deal with the stroke problem. The chapters are divided into those dealing with a discussion of the differential diagnostic aspects of the problem, the principles and practical aspects of treatment, and a balanced value of ancillary diagnostic methods.

If it were only for the five pages in the chapter on "What Not to Do," this short monograph would be well worth its unqualified recommendation.

Lt. Col. James F. Hammill, MC, USA

Handbook of Physiology and Biochemistry. 42nd Ed. By R. J. S. McDowall, M.D., D.Sc. Professor of Physiology, University of London, King's College. (Originally "Kirkes'" and later "Halliburton's") 759 pages, illustrated. McGraw-Hill Book Company, Inc., New York, Toronto, London. 1956. Price $9.00.

This textbook has had a remarkable history. It first appeared one hundred and eight years ago in 1848, the original author being William Shenhouse Kirkes, of St. Bartholomew's Hospital. Kirkes' Physiology proved to be the favorite text of students, and new editions appeared in rapid succession. In 1896 Professor Halliburton took over the revisions and his sponsorship lasted thirty-five years. The name of Kirkes was dropped and the book became Halliburton's Physiology. In 1928 Professor Halliburton called in Professor McDowall to aid him in a new revision, and the names on the title page were changed to Halliburton and McDowall. Since 1930 McDowall has had sole responsibility for the revisions.

It is interesting to note that in the thirty-fifth edition in 1937 the term Biochemistry was added to the title of the book. This addition gave recognition to the fact that physiology had become infiltrated with biochemical methods and biochemical concepts needed in the explanation of physiologic phenomena. Nevertheless the book is still by far and large a physiology, and only about twenty to twenty-five per cent of the text is biochemistry. It utilizes the latter subject only insofar as it helps to throw light on physiologic functions.

Like all English texts it is written in a fluent and interesting style, and it lacks the verbosity of most American textbooks on clinical or preclinical subjects. For the busy clinician the book is a first aid in assisting him to keep abreast of the newer facts and concepts in the field of physiology.

Lt. Col. Victor E. Levine, USAFR

Military Heritage of America. By R. Ernest Dupuy, Colonel, U. S. Army, Retired; and Trevor N. Dupuy, Colonel, U. S. Army. 794 pages. McGraw-Hill Book Co., Inc., New York, Toronto, London. 1956. Price $10.00.

In the Foreword of this book General Douglas MacArthur states: "He (the soldier) must fully understand the national objectives for which his sacrifice is asked. He must be assured that the diplomat, once he has failed to achieve such objectives by the normal process of diplomacy, will not be entrusted with the strategy designed to enforce them by war."

The authors state that "the objective of this book is to provide for all Americans a military history presented from the American point of view. The project grew from the discovery by one of the authors that there existed no up-to-date, reliable survey or analysis of American military history suitable for use in a college course which he was presenting to ROTC students."

The first part of the book (71 pages) is devoted to strategy and military techniques from the ancient army leaders to the Napoleonic period. Beginning with Chapter 4, however, the remainder of the reading matter (623 pages) is devoted to American military operations. There is no attempt to cover individual unit operations as the authors realize that information is already available. The general strategy of the military operations in the various wars with enough details to make for good reading and instruction is given.

Appendix A records by periods "The Wars of History from Antiquity to Mid-twentieth Century." *Appendix B* deals with "Development of Weapons and War Matériel" according to historical periods. *Appendix C* is "A New Strategy for Korea" by Brig. Gen. S. L. A. Marshall, USAR, editor of the Detroit *News*.

There is an extensive "Selected Bibliography" and index.

Those interested in history will want to read this book, and those teaching military subjects should have the book constantly available.

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